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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 3 NUMBER 1

1984

MISSOURI BOTANICAL
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THE BRITISH PTERIDOLOGICAL SOCIETY

Officers and Committee for 1984

President: A. C. Jermy

Vice-Presidents	J. W. Dyce, Dr R.E. Holttum, F. Jackson, R. Kaye, Prof I. Manton, Dr S. Walker
Honorary General Secretary and Editor of the Bulletin	A. R. Busby, University of Warwick, Science Education, Westwood, Coventry CV4 7AL
Treasurer	Dr B. A. Thomas, Biological Sciences Department, Goldsmiths' College, Rachael McMillan Building, Creek Road, London SE8 3BU
Meetings Secretary	K. Kavanagh, 2 Bury Cottage, Offchurch Bury, Offchurch, Leamington Spa, Warwicks.
Editors of the Fern Gazette	Dr M. Gibby, Dr C. N. Page, Dr B. S. Parris Material for publication should be sent to Dr M. Gibby, British Museum (Natural History), Cromwell Road, London SW7 5BD
Editor of the Pteridologist	M. H. Rickard, The Old Rectory, Leinthall Starkes, Ludlow, Shropshire SY8 2HP
Committee	M. Barker, J. M. Camus, J. K. Cramp, P. J. Edwards, R. P. H. Lamb, A. Pigot, R. Rush, G. Tonge, Dr A. Willmot, J. R. Woodhams
Membership Secretary	All communications re Membership & Subscriptions to: BPS, c/o Department of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD
Fern Distribution Recorder	A. J. Worland, 102 Queens Close, Harston, Cambs CB2 5QN
Spore Exchange Organiser	R. F. Cartwright, 13 Perry Mill Road, Peopleton, Pershore, Worcestershire
Archivist	N. A. Hall, 15 Mostyn Road, Hazel Grove, Stockport, Cheshire SK7 5HL

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges and a spore exchange scheme. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist* topics of more general appeal, and the *Bulletin* Society business and meetings reports.

Membership is oen to all interested in fern and fern-allies. Subscription rates (due on 1st January each year) are Full Personal Members £7; Personal Members not receiving the *Fern Gazette* £5; Student Members £5; Subscribing Institutions £8. Applications for membership should be sent to the Membership Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £0.50 extra to cover bank conversion charges).

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from the Treasurer (address above), from whom further details can be obtained.

THE BULLETIN OF THE BRITISH PTERIDOLOGICAL SOCIETY

Vol. 3 1984 No. 1

SECRETARIAL NOTES

MEETINGS CARDS — Meetings cards for 1985 are enclosed with this Bulletin to all inland members. Overseas members visiting Britain can obtain them on application to the Meetings Secretary.

PUBLICATIONS BY AIRMAIL — Our journals can be sent by airmail to overseas members, provided they advise the Membership Secretary and pay an additional subscription to cover airmail postage. Please note that due to the introduction of our new journal — 'PTERIDOLOGIST', the cost of airmailing the journals must be increased to £3.50 for those receiving all journals and £2.50 for those receiving only the 'Pteridologist' and the 'Bulletin'. The amounts should be sent with the annual dues.

COMMITTEES VACANCIES — In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in February 1985. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by the 14 February 1985.

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SUBSCRIPTIONS 1985 — Members are reminded that subscriptions for 1985 are due on the 1st January 1985 and should be paid to the Membership Secretary, British Pteridological Society, c/o Dept of Botany, British Museum (Natural History), Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'.

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AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY — Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. A small number of tickets are available for the Chelsea Show and the Great Autumn Show. These tickets will be allocated to members on a first-come-first-served basis. There are also two transferable tickets available for all other RHS Shows. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE — The American Fern Journal, a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND — This fund, set up as a memorial to one of our Society's great fern growers — Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorius achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

CHANGE OF RECORDER — Members please note that from February 1984, A R Busby retired from the post of British Fern Distribution Recorder. All enquiries and additions and corrections to the 'Atlas of Ferns of the British Isles' should be sent to the new recorder — A J Worland, 102 Queens Close, Harston, Cambridge, CB2 5QN.

HONORARY GENERAL SECRETARY — CHANGE OF ADDRESS —Will members kindly note that with immediate effect, all correspondence to A R Busby should be addressed to him c/o University of Warwick, Dept of Science Education, Westwood, Coventry CV4 7AL.

NEW BINDERS for the BPS BULLETIN — Binders for volumes of the BPS BULLETIN are available from the General Secretary. Attractively produced with red hardboard covers and gold blocked lettering on the spine: only £3.50 each, postage & packing included. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby. Please note, a few binders remaining for the British Fern Gazette at £2.50 each.

REGIONAL MEETINGS IN NORTH BUCKS AND OXFORDSHIRE — Mrs Gwladys Tonge is anxious to start a regional meetings group in this area. Any members interested in supporting Mrs Tonge's idea should contact her at 32 Horn Street, Winslow, Bucks MK18 3AW.

ANNUAL GENERAL MEETING 1984

MINUTES of the ANNUAL GENERAL MEETING held at the British Museum (Natural History), Cromwell Road, London SW7 5BD, on Saturday, 25th February 1984 at 2.30 pm, the President, A C Jermy, in the chair.

PRESENT — P J Acock, Miss J Barker, Miss M Barker, R F Brown, A R Busby, Miss J Camus, R F Cartwright, J K Cramp, C Creary, L Dugdale, J W Dyce, Miss R Elks, Dr M Gibby, Dr N Hards, Miss M Harris, Mrs R Hibbs, A Hoare, Mrs D Holly, Prof R E Holttum, Miss J Ide, Mrs A Jermy, Mrs A Johnstone, Miss K Kavanagh, Mrs E Koh, Miss M Ladell, R P H Lamb, Mr & Mrs B J Mitchell, Mrs M Nimmo-Smith, A Ogden, Dr C N Page, Miss S Peterson, W Pierozynski, Mrs A Piggott, A Piggott, M H Rickard, C Rogers, R J Rush, Dr A Sleep, Mr & Mrs R Smith, Dr & Mrs B A Thomas, Mr & Mrs F Tingey, Mrs G Tonge, Miss J P Westfold, S L Williams, Dr A Willmot, J R Woodhams, A J Worland.

ITEM 1 — APOLOGIES FOR ABSENCE — Mr F Bayford, J A Crabbe, P J Edwards, N A Hall, Dr B Parris.

ITEM 2 — MINUTES OF THE ANNUAL GENERAL MEETING held on 19 February 1983 were read and approved.

ITEM 3 — REPORT ON THE BALLOT concerning the proposed change of name of the Society, and consequences — The Honorary General Secretary reported that at the closing date for returning the ballot papers, 98 votes were returned for changing the name of the Society to The British Fern Society, 220 votes were returned in favour of retaining the Society's present name, plus 2 spoilt papers. The President said that he was well pleased with the percentage return estimated at just over 50% and that the result which is so clear cut. The result is without consequence.

ITEM 4 — REPORT OF THE HONORARY GENERAL SECRETARY FOR 1983 — Membership numbers have shown a distinct upturn this year in spite of losing 46 members due to lapses, resignations and deaths. The membership totals standing at 1st of December 1983: Full members 397, Subscribers 97, Student members 15, Honorary members 9 and members not receiving the 'Fern Gazette' 70, giving a total of 558. An apparent increase of 35.

I am pleased to report another busy and successful year with meetings well attended. The high point of the national meetings programme was the Edinburgh Symposium on the Biology of Pteridophytes providing five days of meetings jointly sponsored by the Royal Society of Edinburgh, The Linnean Society, The International Association of Pteridologists and our own Society, held on the 12-16 September. During the week before, our Meetings Secretary organised an excursion beginning in London and ending in Edinburgh when some 15 overseas visitors saw fern sites of interest and met more members along the route. (See pp 21-27 for report).

Regional meetings have continued to prove popular and it is particularly pleasing to report the formation of active groups in the Leeds area and in the south-east of England.

ITEM 5 — REPORT OF THE HONORARY TREASURER — Dr B A Thomas circulated copies of the Society's balance sheet up to 31 December 1983 and explained that the Society's finances remain strong. The report and balance sheet were approved and adopted.

ITEM 6 — REPORTS OF THE EDITORS — Dr C N Page (Fern Gazette) reported that the number and standard of papers being submitted for publication have shown a very general increase over the last few years, reflecting the high international standards and reputation that our publication has. By far the greater numbers of papers are from overseas members with 'home' members being relatively quiet. This trend has certainly continued in 1983 and we have some excellent articles for publication, and enough for either the next two issues or for one much enlarged one. All this has meant a much greater load of work falling on the editor, at a time when I have also many other heavy commitments. It has now become essential to get help in the editorial duties and to this end, Dr Mary Gibby and Barbara Parris have volunteered to act as co-editors beginning with the current (1984) issue.

M H Rickard (Pteridologist) reported that the first issue of this new Society journal was now virtually complete and would be with the printers very shortly.

The President thanked the Secretary, Treasurer and Dr Page and Mr Rickard for their efforts.

ITEM 7 — ELECTION OF OFFICERS AND COMMITTEE
The Honorary General Secretary, A R Busby, the Honorary Treasurer Dr B A Thomas

FINANCIAL STATEMENT AS AT 31 DECEMBER 1983

ORDINARY ACCOUNT

Income

(1982)			
£4405.60	Subscriptions		£4462.15
10.99	Sundries		42.15
	Sales –		
150.00	Booksales	£324.20	
	Offprints	45.60	
	Leaflets	51.60	421.40
	Interest on Deposit Accounts		210.20
£4453.89			£5135.90

Expenditure

870.00	Metloc A/C Bulletin Vol 2 No 5	863.00
1190.00	Metloc A/C Gazette Vol 12 Pt 5	1476.00
202.07	Printing and Stationery	502.93
767.23	Administrative Costs & Postage	923.78
32.05	Subscriptions to Societies	31.05
26.00	Meeting Costs	92.29
	Display Screens	244.18
	Edinburgh Reception (Int Symposium)	100.00
£3087.35		£4233.23
1366.54	Excess of Income over Expenditure	902.67
2019.70	Balance carried forward from 1982	3385.25
	Balance carried forward to 1984	£4287.92

PUBLICATIONS ACCOUNT

Balance carried forward from 1982		£526.86
Sales –		
Gazettes and Bulletins	£92.50	
Hardy Ferns	98.00	190.50
		£717.36
Less reprinting Gazettes		£352.00
Balance carried forward to 1984		£365.00

GREENFIELD FUND

Balance carried forward from 1982	£1588.42
Interest from Deposit Account	127.57
	£1715.57
Less Grant	50.00
Balance carried forward	£1665.99

and the Meetings Secretary, Miss Kathryn Kavanagh have agreed to stand for another year and were duly elected.

Three nominations had been received for the three vacancies occurring on the Committee: Dr Alan Willmot of Derby, (prop. A R Busby, seconded A C Jermy), Mr Anthony Pigott of Hertford, (prop. Miss J Camus, seconded Dr M Gibby), Mr Richard Lamb of Daventry (prop. A R Busby, seconded N A Hall) had accepted their nomination and with the rest of the Committee were elected.

Due to the introduction of the Society's new journal this year, Mr M H Rickard was elected as Editor of the new journal and Mr Busby has agreed to fill the post of editor of the 'Bulletin' as part of his duties as Honorary General Secretary.

The Editors of the 'Fern Gazette'. The Committee proposed that Drs Mary Gibby and Barbara Parris be elected joint assistant Editors of the 'Fern Gazette' with Dr Page as Chief Editor. They were duly elected.

ITEM 8 — ELECTION OF MR J A CRABBE TO HONORARY MEMBER
The President conveyed to the meeting the apologies of Mr Crabbe for not attending the meeting due to ill health and outlined Mr Crabbe's long service to the Society. Jim Crabbe's main contribution to the Society was in helping edit its journals and his wisdom had helped to guide the Society in many ways over the past twenty years.

ITEM 9 — ANY OTHER BUSINESS — As these appeared to be no further business the President thanked the members for attending and closed the meeting at 14.59 hrs..

LECTURE MEETINGS AND VISITS

The Spring Indoor Meeting was held on the 25 February at the British Museum (Natural History), Cromwell Road, London, immediately after the AGM.

The members assembled to hear a talk by Dr C N Page on his fern-hunting experiences in the Pacific and Australasia. It became quickly obvious that Dr Page had set himself an enormous task in condensing a vast amount of experience in the ecology and geology of the area into the short period available that afternoon, however, he did so in a most lucid way and it was interesting to note how those present could only gaze spellbound at the screen as slide after slide illustrated exotic ferns and fern allies of great beauty against lovely, sun-drenched back-cloths of rain-forests, mountain ranges and fern-tree groves.

The Autumn Indoor Meeting was held on Saturday, 20 October at Aston University, where 36 members and guests assembled to hear a talk by Martin Rickard on 'Hardy Polypodiums'.

Martin's talk mainly centred around those varieties that are still in cultivation and it became quickly evident that much confusion exists largely through carelessness and because, to a smaller degree, the fact that *Polypodium* cultivars tend to change slightly over the years or even revert to the normal shape.

He gave the impression that no other genus with cultivars is in such disarray with their nomenclature, and that Martin has set himself a real task in trying to sort them out. The membership itself can help Martin in this task by sending him any good fronds of unknown *Polypodium* cultivars in their collections or from their own wild finds or any forms they might 'discover' in public collections.

Kew Gardens — 5 May — Forty members and guests gathered in the Fern section potting shed to hear a talk by John Woodhams on the propagation and cultivation of Platyceriums (Stags-horn ferns) at Kew.

John began by emphasising the epiphytic nature of stags-horn ferns and their requirements for good drainage, and pointed out that they prefer hanging baskets to being pot grown. The compost best used for them is a peat-based compost with perlite and grit added to ensure that it is free-draining. Stags-horn ferns can suffer from overwatering, John explained that a symptom of overwatering is black patches occurring on the nest fronds, it is best to water them only when they really need it.

Although stags-horn ferns can be grown from spores, they are rather slow to germinate and achieve fertilisation. Fortunately one or two species readily produce daughter-plants which can be carefully prized away from the parent plant and potted up in the usual way. Stags-horn ferns have few pests but brown scale can be a persistent problem and John recommended a weak solution of Malathion at the rate of ½ fl oz to 2 gallons.

After his talk, John lead the members around the fern houses, the filmy fern house and the fern propagation unit.

Hidcote Gardens, Gloucestershire — 9 September. Some 30 members and guests assembled in the car park of the National Trust gardens at Hidcote Manor.

Although Hidcote is not a garden noted for its ferns, several species and varieties were to be found. Some, such as the shuttlecock fern, *Matteucia struthiopteris,* in large groups. Throughout the gardens, the usual plantings of Male-fern, Lady-fern, Harts-tongue and Shield-ferns were noted and one particularly fine *Polystichum setiferum* 'Plumosum-cruciatum', which, unfortunately, had been planted close to the paths edge where visitors could inadvertently tread upon it.

Inevitably, such a large party fragmented and small groups of members could be found throughout the gardens all afternoon, each one dallying in their own favourite spot. The weather which had been a mixture of sunshine and showers quickly broke down to more heavy persistent rain and sent the visitors to seek shelter in the tea-rooms or to consider their return home.

A R Busby

REGIONAL MEETINGS 1984

WEST MIDLANDS

Matt Busby

'Welcome to Spring' Flower Show — 22-23 April — Once again, by the kind invitation of the Solihull Horticultural Society, our Society was able to exhibit a selection of hardy and indoor ferns together with a display of spore germination and Society literature. Entries for the competitive class for a potted fern was down on last year, amounting to only four entries. Results of class 142, one pot fern were; 1st prize, Miss M Smith *Adiantum raddianum* 'Lady Geneva', 2nd prize, Mr R Smith, *A. reniforme* and 3rd prize, Mrs B Smith, *A. raddianum* cultivar. Richard and Jenny Lamb and Ray Smith brought along a number of hardy and indoor ferns which we were able to offer for sale to the public and these realised £8. This money goes towards financing local meetings. A special thank you is due to Ray Smith for helping to man the stand again this year.

Flora of industry — Sunday, 29 July — Nineteen members and guests embarked on the narrow-boat 'ANSON' for a lazy journey along the Birmingham Canal Navigations from Gas Street to Smethwick. The party were able to observe how ferns and other plants have taken advantage of the canal tow-paths, bridges and waste places providing the West Midland conurbation with a pleasing green oasis. At Smethwick, the party left the boat and, armed with a picnic lunch, ventured forth to explore the recently designated 'Galton Valley Canal Park'. Matt Busby, who has recently completed a species list of the plant life to be found there, led the way pointing out various treasures of ferns and flowering plants. On grassy banks, shady corners, neglected brickwork and damp ditches were Male-fern, Lady-fern, Bracken, Hart-tongue, Lemon-scented and Soft Shield-fern. After some 2½ miles of walking and talking, the party returned to the 'ANSON' where the bar did brisk business before returning a somewhat weary party back to their cars at Gas Street.

Spetchley Gardens, Worcestershire — Saturday, 8 September. Thirteen members and guests assembled at Spetchley Hall near Pershore, for a private visit to the gardens. This large garden has a wealth of plants for gardeners interested in herbaceous plants and shrubs and it is encircled by a wide selection of mature trees providing plenty of shade. Unfortunately, many of the shrubs, particularly Rhododendrons, were suffering from the effects of the prolonged dry summer. There is plenty of evidence of recent plantings of both British fern varieties and foreign hardy ferns, as well as evidence that many years ago, Spetchley Garden possessed a hardy fern collection. Amongst the large herbaceous borders on the west side of the walled garden, a number of old fern varieties are found, notably a *Dryopteris filix-mas* 'Grandiceps' and a delightful miniature variety of the Soft Shield-fern, *Polystichum setiferum* the fronds of which are never larger than 30 × 8 cm (12 × 3 inches) and always sterile.

Thanks are due to the Estate Manager and his staff for a very enjoyable afternoon.

Matt and Margaret's illustrated wine and cheese party — 18 October — Twenty members and guests attended an autumn get-together at the University of Aston in Birmingham. Clive Brotherton and Richard Lamb kindly brought along a selection of their surplus ferns, both hardy and indoor, and many of us took home new acquisitions to add to our collections. Colour slides shown during the evening covered a wide range of topics including this season's trips to the Lake District and the Pyrenees by John and Margaret Collins, a selection of local fungi by Miss Jacqui Ogden, a few slides by Richard Lamb of his garden at Daventry, a visual report of the July canal trip by Alan Ogden and Ray and Brenda Smith's slides of their visit to Orkney and Shetlands.

Thanks are due to John, Margaret and Clare Collins, Janet Lowe and Margaret Busby for their kind help with the refreshments.

LEEDS AND DISTRICT

Jack Bouckley

The inaugural meeting of the Leeds and District Group — Wednesday 18 January was held at Leeds Polytechnic, Headingly. In spite of icy, snowy conditions, nine keen members turned up to make the meeting very interesting and quite successful. There were six apologies for absence, all from members who are very keen to see the formation of this group. Those present were a very representative group including professional and amateur botanists, gardeners and conservationists. It was quickly decided that we should endeavour to further the course of the Society by holding field and indoor meetings with lectures and garden visits.

To ensure the smooth running of the group we decided that two members should form a small administrative committee, therefore, Jack Bouckley agreed to act as chairman with Major Richard Unett as group secretary. Finally, we got down to the pleasant task of trying to arrange a programme of visits for 1984.

The meeting thanked Mr Paul McGrath for arranging the pre-meeting printing, booking the room and for laying on the coffee which we all enjoyed at the end of the meeting.

Harlow Car Gardens, Harrogate — 13 June — It was on the wettest evening for many weeks that ten members of the Group met for their first get together since their formation. The venue was the headquarters of the Northern Horticultural Society, and we were very privileged to have Philip Swindells as leader as we looked round the various fern species and their variations. Most were British hardy ferns and it is hoped that our group will be able to introduce some of the missing ones such as the Woodsias, the rarer *Cystopteris* and, if a suitable place can be found, a few filmies. Everyone present was pleasantly surprised to see so many ferns in the 60 acre garden. The Royal fern, *Osmunda regalis,* with its crown of fertile fronds, looked magnificent as it towered above the smaller, but equally beautiful *Adiantum, Onoclea,* and *Polypodiums.* In spite of the rain, everyone enjoyed the walk around and we finished off the evening by selling a few plants and having a chat over a cup of tea and biscuits. Richard Unett thanked everyone for attending and he also proposed a vote of thanks to Phillip Swindells and to Mrs Eleanor Fisher for providing the refreshments.

CASTLE HOWARD — 14 July — Eleven members led by Jim Russell, met at Castle Howard and were taken for a memorable walk through the woods in some of the Castle grounds where we saw many unusual ferns growing including such varieties as *Polystichum setiferum* 'Pulcherrimum', *Dryopteris filix-mas* 'Linearis', and a very fine *Athyrium filix-femina* 'Victoriae' with most of the fronds normal Victoriae but as an added bonus there were dotted here and there, fronds which were ramose and some which were also cristate. A very beautiful fern indeed. At the end of the morning session we all went back to the home of Mr Russell, who supplied us with a very delightful meal with ample liquid refreshment.

After lunch we were shown around the fern house with such plants as *Cyclosorus dentatus, Pteris Childsii* and *Stenaloma decompostitum* among many other ferns and also a beautiful variegated variety of the clubmoss, *Selaginella martensii.*

Richard Unett thanked Jim Russell and his sister for everything they had done to make our day a day to remember for a very long time. Then, to finish off, we were all given at least one plant to take to our respective homes.

Jack and Ruth Bouckley At Home — 23 August — Fourteen members of the group met at the home of Jack Bouckley in Harrogate to see around his collection of ferns, alpines and dwarf conifers. Some of the plants were suffering from drought and a lot were still confined to pots as everything was too dry for planting out into more suitable and permanent positions. Some of the members had travelled from as far away as Hartlepool and we were very pleased to see Nigel and June Hall from the other side of the Pennines. Ruth Bouckley really enjoyed herself as she provided refreshments for the group.

Hack Fall, N. Yorkshire — Saturday 8 September — Twelve of us plus our leader, Dr W A Sledge of Leeds University Botany Department, turned up at Hack Fall in an area of mixed woodland and part of the Nidd Gorge with various streams draining down into the main river. There are acid and alkaline conditions. We had not been walking very long before we were surrounded with stands of *Dryopteris dilatata* and Dr Sledge explained the difference between that and the usual *D. filix-mas.* One of our younger members, Bob Adams, then spotted a *Polystichum setiferum,* a fern which later on became much more plentiful. This was followed with *Athyrium filix-femina* and the first of quite a few stands of *Equisetum telmateia.* Dotted about among the ferns and Horsetails were the occasional clumps of *Carex pendula* standing up to 5′6″ and dancing about in the light breeze. This is a very impressive sedge in its natural sites but can become quite a pest if introduced to a garden.

Three of us followed a stream uphill for a hundred or so yards and it was there that we found our first *Blechnum spicant* and *Asplenium scolopendrium.* Both types of the fronds of *B. spicant* were taken back to the main party so that they could see the difference between the fertile and barren fronds. Dr Sledge then found another of the *Dryopteris* species, *D. affinis,* and he pointed out how to identify this particular plant.

We had lunch sitting on boulders which had been washed down-stream by the Nidd over the past centuries. Then off again to follow another stream which ran along a steep sided gorge. On the opposite side of the gorge we could see a large stand of thousands of *Asplenium scolopendrium* stretching along the top of a tufa cliff as far as you could see and nestling among them Dr Sledge saw something which we had not found before. After closer investigation we were in no doubt that it was an area of about thirty square yards of *Phegopteris connectilis* and also it was seen that among the 'scollies' were a number of *A. scolopendrium* 'Crispa', perhaps not so wavy edged as some we see in captivity but even so, they were quite crisped.

A little further on was a rotting tree trunk, jutting out at an angle of about 45 degrees and leaning over the stream in a not too accessible place and on this old piece of rotting vegetation was a colony of *Polypodium vulgare* which as far as we know had not been recorded in this area before. Bob wandered off along another path where he found *Polystichum aculeatum* growing near a limestone cliff.

We arrived back at our cars and we expressed our appreciation for the way Dr Sledge had led the party and then we were asked by Mrs Ramsden, a member of the group who lived fairly locally if we would like to go back to her home for refreshments and for a look round her garden. This was very much appreciated by all. It certainly was a very enjoyable and profitable day, but unfortunately we did not get a sight of *Dryopteris aemula* which, according to local records, had been seen in the area many years ago, but, on the other hand, there must have been thousands of ferns there which we had not seen, so we are determined to look again ... and again.

SOUTH WEST REGION

Mary Potts

Tamar Wood, Devon — 24 June — The first meeting this summer was held at Tamar Wood. On a fine windy day, eleven members and friends, (slightly more lichen than fern enthusiasts) were led through an excellent itinerary by Dr Dougal Swinscow, with the help of the warden of Yarner Wood during the morning.

An ancient wood, one of the first to become under the care of the Nature Conservancy Council, Yarner Wood is predominantly oak with birch and some fine specimen Holly trees. The soil is acid and *Blechnum spicant, Dryopteris affinis* and *Dryopteris aemula* were growing well along the floor and sides of the valley. A patch of *Hymenophyllum tunbrigense* was of great interest growing on a bank beside the main track, well above the stream and no visible reason — such as extra moisture — for its presence in that particular spot. A good stand of *Osmunda regalis* was growing in the lower marshy Sphagnum bog; we were able to see the large well-formed 'flowering heads' of spores turning colour from brown/umber to green as they ripened.

The party then travelled to Henchford Reservoir to see large expanses of the fern ally *Isoetes echinospora.* This extraordinary plant looked just like thick fleshy grass and was growing well above the receding water-line. Dougal told us he had first noticed it because of the residue of broken brittle leaves washed up against the dam of the reservoir.

We then visited a lane close by to see a particularly good form of *Asplenium adiantum-nigrum* growing on the bank along with the first limestone ferns of the day, *Polystichum setiferum* and *Asplenium scolopendrium.*

The day finished with a sumptuous tea kindly provided by Mrs Swinscow and a look around Dougal's garden, which, in correspondence, he had described as 'small and select'. The description was quite apt and 'exceedingly' select would describe the fine specimens of ferns growing in the garden. A very large plant of *Asplenium scolopendrium* 'Bolton's Nobile', *Dryopteris filix-mas* 'lineare polydactyla', and some select *Athyiums* and *Polystichums* caught our attention amongst a host of carefully tended and interesting plants.

We would like to thank Dr and Mrs Swinscow for a well-guided day and generous tea.

Greencombe Open Day — 1 July — On a fine hot afternoon twenty two members met at Greencombe, Joan Loraine's garden at Porlock in Somerset. We were able to combine this local event with the weekend meeting led by Peter Edwards and so give members from further afield an opportunity to see Joan's garden and fern collection.

We last visited Joan's garden four years ago and while able to eulogise on its attractions then, we now found ourselves quite overwhelmed by its tranquil beauty, enhanced by the perfect summer afternoon. The recently acquired woodland was still comparatively naked with an underplanting of young shrubs and sedges. The older areas of woodland garden were well furnished with mature shrubs and some large stands of superbly grown ferns. We all admired *Blechnum chilense* and *Dryopteris aemula* (though sorry to see a large *Dicksonia antarctica* had disappeared since our previous visit) as well as many good selected forms of *Dryopteris* and *Athyrium* including *Athyrium filix-femina* 'Plumosum Druery' and *Dryopteris dilatata* 'Cristata Grandiceps'.

The drought had been of some weeks' duration but very little sign of dryness was apparent in this shaded maritime garden which also enjoys equable and mild winters. A fern which survives outdoors at Greencombe is *Pteris cretica* — that ubiquitous house fern — and shows quite a different habit with handsome fronds eighteen inches high. This plant has proved reasonably hardy, over a number of years, along with other shrubs and plants which give this garden its unique luxurient flavour.

We enjoyed an excellent tea and returned home pleased and enlightened.

Philip Coke's Open Day, Stinchcombe — 15 July — However hot and dry the summer Robin Hill's Gloucestershire weather always seems to be cool and overcast and so it proved this year when eighteen members and friends met at Philip Coke's house on the 15 July. Though no rain had fallen at Stinchcombe for many weeks the fern collection was well tended; many specimens increased in stature and beauty since last year, particularly *Dryopteris erythrosora* and *D. wallichiana.*

Philip had a fine mixture of Polypodiums in variety planted amongst decorative ivies; these two genera are stalwart companions, forming a rich green cover in July with the newly arisen Polypody fronds, and continuing into winter with their hardy mixture of texture and variegation.

Philip's small collection of tender ferns was an interesting as usual, as diverse a selection of species and varieties as that in botanical collection. Members brought along plants for exchange and Philip, with customary generosity, dug up a number of plants for grateful recipients. The day finished with an excellent tea provided by Philip, to whom we are all grateful.

A short obituary of Mary Coke, Philip's wife, is included elsewhere in this Bulletin. At the time of writing, October '84, Philip is in the process of moving to Hampshire and his fern collection is to be broken up. I should like to take this opportunity of thanking Philip for a series of open days over the last nine years.

I have always felt, when arranging the South West programme each year, that the day spent at Robin Hill would form the fulcrum of local events, and I could rely on Philip and Mary to provide the atmosphere of enthusiasm and ambience so necessary for the welcome of newer members. Though I know that we shall miss that annual treat at Robin Hill I look forward to seeing Philip at future South West meetings and wish him well in moving and establishing the pride of his collection in a new and smaller garden.

Black Rock, Cheddar — 19 August — Eleven members and friends met at the Potts' home for lunch and a quick look around our rather dried-up and dilapidated garden. Like the rest of the country we had, by this date suffered from three months of drought and though our continuously watered garden was an oasis in a parched landscape many of the plants were showing signs of thirst. Some polypodies of the *australe* group had yet to come into growth and the *Polystichums,* though withstanding the dry weather surprisingly well, were beginning to show foreshortening of the newer fronds. The local *Asplenium ceterach* had been tightly curled for many months and must surely this year succumb to the drought. (They didn't — what a miraculous fern).

During the afternoon the party visited Black Rock Drove, a wooded valley situated at the top of Cheddar Gorge. The upper regions of the gorge, where the tree canopy shaded the road, were noticeable for their verdant growth and in places the grass was still damp with morning dew. The ferns were growing luxuriently in these ideal conditions; twelve species were seen, large stands of *Gymnocarpium robertianum* and fine specimens of *Polystichum aculeatum* along with a few plants of *P. setiferum* with rounded pinnules.

We returned to Webbington for tea and a number of plants were exchanged, amongst them some coveted bits for greenfingered plantsmen.

SOUTH EAST REGION

Paul Ripley

Visit to Nap Wood and Rocks Wood, Sussex — 8 July 1984. On one of the hottest days of the year, twelve members and guests under the leadership of Clive Jermy, explored two classic fern localities in the Tunbridge Wells sandstone of the Sussex Weald.

The first of these, Nap Wood, is an example of a Wealden oak wood, owned by the National Trust and is administered by the Sussex Naturalists Trust whose Honorary Warden, David Harvey, had shown us the site a few days earlier. Apart from a small chestnut coppice and some wetter areas, the ground was almost entirely covered with Bracken, (*Pteridium aquilinum*) but along the paths was a surprising variety of species — Sweet Mountain Fern (*Oreopteris limbosperma*), Hard Fern (*Blechnum spicant*), Broad

Buckler Fern (*Dryopteris dilatata*), Narrow Buckler Fern (*Dryopteris carthusiana*), Golden-scaled Male-Fern (*Dryopteris affinis* subsp. *affinis*) and the Male-Fern (*Dryopteris filix-mas*), the latter, remarkably uncommon, were found on the floor of the wood and along the paths.

The Lady Fern (*Athyrium filix-femina*) was commoner and larger in the boggy areas near streams, but the gem of the wood, for us, was bank containing the Hay-scented Buckler Fern (*Dryopteris aemula*). This, together with the other *Dryopteris* species, was examined and discussed in order to understand the characters of each. For the record, a plant of a Polypod (*Polypodium spp*) was found on this bank but remained undetermined.

In the afternoon, Rocks Wood in Eridge Park was explored, mainly in order to see one of the locations (the most easterly?) of the Tunbridge Filmy Fern (*Hymenophyllum tunbrigense*). This colony looked a bit dry but it was surrounded by a glorious array of Hay-scented Buckler Fern, obviously happy in this location, and looking very beautiful with its lime-green foliage dappled with afternoon sun.

Just by this rocky site lay a spring feeding a flush remarkably rich in fern species. With the exception of *Polypodium* (not found here) and the Hard Fern (common elsewhere in this wood) all the species found in the morning, were growing in this site. The hybrids *Dryopteris x tavelii* and *Dryopteris x deweveri,* were also clearly seen.

We were most grateful to Clive Jermy imparting some of his boundless knowledge and enthusiasm. I am also grateful to my wife, Linda for providing tea for the majority of the party who happily were able to call in at Tonbridge before returning home, and to Ron King who generously let many of us have some very well grown Royal Fern (*Osmunda regalis*).

Great Dixter Meeting — 16 September — Seventeen members and guests met near Northiam, on the Kent/Sussex border for a visit which combined fern hunting with a visit to a famous garden. We were once again fortunate to have Clive Jermy's expert guidance.

In the morning, we visited Watts Hill Wood, a narrow valley cut by a small stream, South-west of Northiam (804228). On banks near the road *Polypodium vulgare* and *Dryopteris filix-mas* were common, but further in the wood, especially where shade was not too deep, *Dryopteris dilatata* and *D. carthusiana* were found, together with *Dryopteris affinis* subsp. *borreri. Blechnum spicant* was common and a few fine plumose, but often sterile plants of *Athyrium filix-femina* were found near the stream itself.

Nearby, a recently-coppiced chestnut plantation was also visited (812239). Two or three small springs had prevented coppicing in a number of areas and an interesting variety of ferns was found in the spring hollows, often in surprisingly exposed situations. *Dryopteris carthusiana* was common, together with *D. dilatata* and the hybrid *D. x deweveri. Dryopteris affinis* subsp. *affinis* was also seen together with *D.* subsp. *borreri. Blechnum spicant* and *Athyrium filix-femina* completed the record.

In the afternoon, the gardens of Great Dixter were seen. We were most fortunate to be shown round the gardens by Christopher Lloyd, one of the sons of Nathaniel Lloyd, who with Sir Edward Lutyens created the gardens between 1910 and 1914, and who is a well-known author of books on gardens and gardening. At least 30 fern species or cultivars were seen in the gardens and another 4 (including *Asplenium marinum*) in the nursery — although plants are propagated vegetatively only. Highlights for me were a fine *Aspl. scolopendrium* 'Crispum Cristatum', *Blechnum chilense* – happiest in an exposed sunny site, and *Davallia mariesii,* apparently quite hardy. Apart from *Polypodium interjectum* and *P. australe* on walls, *Asplenium ceterach, A. ruta-muraria, A. adiantum-nigrum* and *A. trichomanes* were among the many 'uninvited guests' enhancing the beauty of these lovely gardens.

Rosemary Hibbs and her family very kindly entertained the majority of the party to tea at her home in Hailsham after the meeting. Evidence of Rosemary's talent for raising ferns from spores was abundant and the fascinating variety of ferns provided a feast of another kind.

NATIONAL FIELD MEETINGS 1984

PORLOCK — 29 June/1 July — A total of twenty people attended this meeting which was centred on the Oaklands Hotel, Porlock. Local member, Joan Loraine very kindly worked out an itinerary of places for us to visit on the Saturday.

We started the day in the cool, wooded Hawwkcombe, along the route to which we found a number of interesting walls bearing abundantly *Asplenium trichomanes ssp. quadrivalens, A. adiantum-nigrum, A. ruta-muararia, A ceterach* and *Polypodium interjectum.* As elsewhere in the village, the latter often had fronds almost as wide as long. (It was confirmed as this species later at Kew.)

On the hedge banks *Polystichum setiferum* was abundant (and a few forked pinnule tips to boot!), with a little *Dryopteris affinis ssp. borreri* and *D. ssp. affinis, Athyrium filix-femina,* and *Asplenium scolopendrium.* The dryness of the past months meant that most plants in these open habitats looked the worse for wear.

Despite the long diligent searching by Joan and some others, the *Hymenophyllum* formerly known from the ground (sic!) below large boulders in Hawkcombe was not refound. Some members stayed on in the pleasant coolness of the combe while Joan took some of us on to Worthy Wood just west of Porlock. Here, amongst old sessile oak coppice with sparse "woodland form" of *Pteridium aquilinum.* Blechnum spicant and a superb colony of *Dryopteris aemula.* There were hundreds of large plants over an area of about a third of an acre of damp, humus-rich woodland floor.

After lunch in a Porlock public house, we drove up the famous 1 in 4 Porlock Hill and onto Exmoor, making for Downscombe and the chance of refinding *Equisetum sylvaticum,* a rare plant in south west England. Firstly we admired a huge colony of some 400 or so plants of *Asplenium ceterach* on the east end of an old south-facing wall. The colony graded rapidly westwards into *A. trichomanes ssp. quadrivalens.*

The *Equisetum* was eventually found on a shady bank just above the River Exe (which at this point was a small brook). Just north of a camping field and its bank, and east of a fine old hay meadow bristling with *Rhinanthus minor* seemed to us a fairly secure sort of a place. The colony covered a linear strip of about 14 metres and held about 100 stems. Also found there were *Athyrium filix-femina* and nearby a little *Equisetum arvense.* On the opposite bank was a small deciduous wood.

In continuing brilliant cloudless sunshine we move further west to a splendidly isolated spot near Warren Farm, on route negotiating a rough narrow track perched on a steep open valley side. A small area below a north-facing flush yielded *Oreopteris limbosperma* (which was also abundant on tracksides of the moors nearby), *Blechnum spicant* and *Dryopteris filix-mas.* This latter species had many dark almost black, blotches about 2-3mm diameter on its pinnules. These were later identified by Brian Spooner at the Kew Herbarium as the uncommon ascomycete fungus *Taphrina verstergenii* Giesenhagen. In the main seepage a few metres above this site was a 20sq.m. patch of *Sphagnum spp.* with three very dense patches of the south-west rarity *Phegopteris connectilis.* They were extremely healthy and many more times more dense than when occurring on a characteristic woodland bank. It proved to be a magical spot and we were reluctant to leave.

A slow drive back via Horner Wood gave us a chance to see more of the beauty of the area. It was noted that, as in Hawkcombe, Horner Wood suffered in places from sheep-grazing on a scale which may be seriously affecting the vegetation structure. A sheep in Horner Wood was even seen to eat a fern frondl, in this case *Oreopteris limbosperma.*

On Sunday morning, with the excuse of some old records of *Asplenium septentrionale,* we set off to Yenworthy. Despite some searching we did not find it but enjoyed ourselves walking directly north into the steadily deepening narrow combe of Embelle Wood, leading down to the coast. Here were dense carpets of *Polystichum setiferum,* with *Dryopteris affinis ssp. borreri* and *D. ssp. affinis, Dryopteris dilatata, Pteridium aquilinum,* a little *Oreopteris limbosperma* and *Asplenium scolopendrium.* A few plants of *Dryopteris aemula* were also found near the stream. Much of this stream's length was searched for possible *Hymenophyllum,* but we had to be satisfied with the golden-green moss *Hookeria lucens* on the spray-soaked rocks. On the deserted pebbly beach were remains of some old works with some large *Asplenium scolopendrium* plants lurking inside. A few 100m to the east were found a few rather tatty plants of *Asplenium marinum,* at about 5 metres up in horizontal fissures of the sandstone cliffs. Time did not allow a more extensive search.

By mid-afternoon we had all assembled at Joan Loraine's garden in West Porlock. Here we were joined by Mary and Chris Potts and the south-west region members. Joan guided us around her immense garden rich in hardy ferns, including three immensely healthy looking plants of *Athyrium niponicum* 'Pictum'. These had strong colour contrast and pattern. The drought had not helped the growth of many plants, but the *Polystichum setiferum* congested cultivars still managed to look smart.

The non-woodland part of the garden was as Joan's mother said "like a set from 'Les Sylphides' " — a superb abundance of well-placed herbaceous and small woody plants set off by a very green lawn. For the garden as a whole an estimate of 1600 flowering plants, ferns and Bryophytes would probably be an underestimate. As if this feast was not enough we partook of an exciting array of homemade summer foods, including a simple but delicious dish of eggs and sorrel.

At this point Chris Fraser-Jenkins, his father and his fiancee arrived to swell the numbers and finish off the food. Chris kindly determined some *Dryopteris* fronds collected that day, and with Anthony Piggot we were able to see clearly some of the differences between our (apparently) three entities. They were *D. spp. affinis* with the squared-off pinnule apices, very glossy upper surfaces to the lamina, and *D. spp. borreri,* both as smallish fronds and as large (1.7-2m) fronded plants. The latter has been referred to as *D. ssp. robusta* but this was sunken into synonymy under *D. ssp. borreri* by Chris two years previously. Joan remarked how, depending on the season, the same individual of *D. ssp. borreri* in her garden could take on a medium stature (dry) or large stature (wet season) look, the latter would have been named *D. ssp. robusta* by most folk and the former *D. ssp. borreri!* It goes to show how important the detailed knowledge gained by growers is.

Some of us were still lingering in the garden at 7.30 pm, but with such a setting, the sea as a backcloth and calm warm summer air, who could blame us!

P J Edwards

NORTH-WEST IRELAND — 21-28 July — This week-long meeting, for which we were blessed with warm dry weather was centred on Sligo with the headquarters at the Bective Hotel. From here we ranged into Donegal, Leitrim, Cavan and Fermanagh and were given much hospitality and guidance from leading local naturalists. Throughout the planning and during the early part of the meeting I received help in every conceivable form from Maura Scannell, Keeper of the Herbarium at Glasnevin Botanic Garden; she was in effect joint leader. During our excursions to Fermanagh the expert guidance of Dr Ralph Forbes of Queens University, Belfast and Robert Northridge of Enniskillen was also at my disposal. The first two days were organised as a joint meeting with the Irish branch of the Botanic Society of the British Isles, with Ralph Forbes as co-leader. It was encouraging that interest in ferns was such that several BSBI members stayed on for extra days, giving us the benefit of their local knowledge. On Friday, 20 July, members of both Societies were invited to a delicious buffet supper hosted by Joan and Alec Crighton, to meet leading members of the Sligo Field Club, an occasion which set the tone of friendship for the ensuing week.

From the outset I think it should be said that no botanical trip to Ireland is complete without R L Praeger's *The Botanist in Ireland* (1913, reprinted 1977; ISBN 0 85409 955 7) in one's pocket and the same author's *The way that I want* (1969; Figgis, Dublin) as bedside reading.

On the 21st we went six miles north of Sligo to Glenade, where that striking flat-topped mountain, Ben Bulben, which rises from sea-level at its western end in impressive 1500 ft cliffs, is broken by a valley running south-east in the Carboniferous limestone. Here on the escarpment called Peakadaw (actually in Co. Leitrim) are tower blocks of limestone, broken off the main massif by glacier action in the last Ice Age and which, on slipping down the hillside as the ice melted, have formed deep rifts between them and the original mountain side. Here in shade and moisture, at some 360m (1200 ft) altitude, is a ferny glen, almost impossible to see from the road on the southern flank. *Asplenium scolopendrium, A. trichomanes* subsp. *quadrivalens* and *A. viride* abound, with *Cystopteris fragilis* luxuriant in deeper clefts and *Polystichum lonchitis* a common plant. *P. aculeatum* is also here and more surprising is *P. setiferum.* The potential of the site to contain hybrids of *Polystichum* was drawn to the attention of botanists in 1972 (Sleep & Synott, *Brit. Fern Gaz.* 10:281-2) when the latter author discovered in the Dublin National herbarium a specimen which agreed with the description of *P.* × *illyricum.* He contacted Anne Sleep who confirmed the identification and who pointed out that as *P. setiferum* was also there the possibility of the hybrid of that species with *P. lonchitis (P.* × *lonchitiforme*) being present was high. In 1977 Maura Scannell, Anne Sleep and Tadeus Reichstein, of Basel, visited Glenade and found more hybrid plants. Morphologically these two hybrids are very difficult to tell apart but when their chromosomes are counted identities can be confirmed, as the former is triploid and the latter diploid; both hybrids were confirmed as present in 1977 by Anne Sleep. We did not see typical *P. aculeatum* but did find the other two species in quantity and plants intermediate between them (?*P.* × *lonchitiforme*) — a very distinct and attractive plant. Bearing in mind this is the progenitor of *P. aculeatum* itself it is not surprising that it looks similar to that species. The sporangia on one such plant contain large spores amongst the aborted ones (possibly with twice the normal number of chromosomes) which if they germinate would give rise to tetraploid plants. Anne Sleep has shown this can happen in the botanic garden and presumably it could also happen in the wild, in Glenade. It would take more than the morning allowed in our schedule to survey this area fully and it would need to be earlier in the year if one was to fix chromosome material. The obvious thing to do was to leave all plants in situ — which we did, for here was evolution in action.

After lunch we stopped above Glenade Lake on the roadside on the flanks of Ben Bulben to search for possible hybrids of *Dryopteris aemula* × *dilatata* in vain; but the *D. dilatata* was distinctly glandular. Both *Phegopteris connectilis* and *Oreopteris limbosperma* were here on the bank, where water flushed off the fields above.

We diverted south to search along the S. side of Doon Lough for *Isoetes* but there was none to be seen. We did see an abundance of *Equisetum* (*E. arvense, E. fluviatile,* the hybrid *E.* × *litorale* and the hybrid of the latter species with *E. palustre* (*E.* × *dycei*) confirmed on site by Chris Page as the first record for Ireland. We saw more during the week and I am convinced that many of the previous records for *E.* × *litorale* should in fact be *E.* × *dycei;* it is a characteristic plant of lake shores. Chris Page also found the putative hybrid *E.* × *rothmaleri* (*E. arvense* × *palustre*), making the hat-trick. Although *E. telmateia* was locally abundant and near to *E. palustre* we did not find *E.* × *font-queri,* so far not recorded in Ireland.

Saturday was brought to a close with a visit to Knocknarea an outlier of the Ben Bulben limestone plateau lying to the west of Sligo. The Glen, a rift running across, not parallel to the slope, is renowned for its ferny herbaceous flora. My recollection of the site, last seen in 1961, was that of abundant *Asplenium scolopendrium* with fronds over one metre high. This year the ash canopy seems more open and the ferns less abundant and smaller but still a good sight. *Polystichum setiferum* was in quantity but *P. lonchitis* is not present at this low altitude (c. 250m). Polypodies are in some quantity and *P. australe* was epiphytic, high on an ash trunk.

Sunday took us eastwards to Eniskillen where under the leadership of Ralph Forbes and Robert Northridge we visited first Tully Bay on Lower Lough Erne where *Equisetum* × *trachyodon* was in some quantity along ditches running into the lough; *E. variegatum* was scarce on the lough shore with putative *E.* × *dycei* growing with its parents. Our second stop at Spectacle Lough, was to see a typical mire of *Carex acutiformis, C. paniculata* and *Phalaris arundinacea* with co-dominant *Equisetum variegatum,* 70-80cm high. Our next stop was Correl Glen in the hill country to the west of Lower L. Erne, cut into the Yoredale Sandstone that tops the limestone on the edges of its range. Here we found a good assemblage of *Dryopteris* (*D. aemula, D. affinis* ssp. *affinis, D.a.* ssp. *borreri, D. dilatata*) and in some quantity *E. hiemale* growing in rocky woodland of holly, and hazel with a ground flora of *Vaccinium* species and *Sphagnum* moss. The *E. hiemale* was stout, branches often 10mm wide, up to one metre tall on the steep rocky shelves of the stream side, spreading up and into the woodland floor.

After lunch at the picnic site we went into the Lough Naver Forest Park where on a dry northfacing sandstone cliff, (some 10 miles from the sea) the unusual sight of *Asplenium marinum* growing (as big plants to 20cms) high in fissures with *A. ruta-muraria,* and *A. trichomanes* ssp. *quadrivalens.* The potential hybrids was great but none found. Obviously although the rock was a definite sandstone there must have been traces of calcium or magnesium. Further, although facing north, the valley below was planted with conifers and the area must have been for the most part very clement as the sea spleenwort is frost-sensitive. On other similar sandstone outcrops S. of L. Achork we were shown *Asplenium adiantum-nigrum, A. viride* and *Polystichum* *lonchitis* again suggesting the chemical content of the course-grained sandstone was base-rich. The orange filamentous alga (*Trentapohlia*) was plentiful also on this rock. Both Hymenophyllums were present here as was *A. scolopendrium; Athyrium* and *Blechnum* was common along the wetter runnels and path banks respectively.

Monday took us to Donegal where local botanist Ralph Sheppard showed us an interesting wooded (Oak-Hazel) valley at Ardnamona on the west side of L. Eske, where again *Equisetum hiemale* was seen as a woodland plant but always with its roots in or near the water-table. The usual woodland species with *A. scolopendrium, Athyrium, Blechnum spicant, D. aemula, D. affinis* agg., *D. carthusiana, D. dilatata* (and the hybrid *D. × deweveri*), *Hymenophyllum tunbrigense, H. wilsonii, Oreopteris, Osmunda regalis, Phegopteris, Polypodium interjectum, P. vulgare, Polystichum aculeatum* and *P. setiferum.* Near a derelict house *Blechnum chilense* had escaped and was forming a substantial thicket by the overgrown trackway. It was at an "unlocalised spot" near L. Eske that Praeger records *Trichomanes speciosum* but in spite of diligent searching no plants were found.

Later in the afternoon we walked up a narrow but open limestone valley of the Coraber river north of L. Eske, into the Croaghgorm or Bluestack Mountains. On the open sides was *D. filix-mas,* not seen before that day, and *D. affinis* subsp. *affinis* was a frequent plant. *H. wilsonii* was also frequent but not its sister species. On ledges *Huperzia selago* was occasional and in runnels or flushes *Selaginella selaginoides* common.

Tuesday saw us nearer our base and the morning was spent on the south side of L. Gill at Slish Wood. Although still natural oakwood by the lake the hillside has been long planted with conifers. As is often the case this does not impair the value of the site as a habitat for ferns and much good hunting was had looking for *Dryopteris* species of the *affinis* group. On the whole this species complex is straight forward in NW Ireland there being so far no ssp. *stillupensis* recorded and *D. oreades* absent, there is only *D. filix-mas* with which it may hybridise. The two subspecies found are the diploid *affinis* (very scaley, pinnules with few blunt teeth usually at the flattened apex, and indusium thick, remaining firm and partly inflex at maturity when splitting if pressure of developing sporangia too great) and the triploid *borreri* (= *D. pseudomas*) (less scaley, pinnules often more pointed with occasional sharp teeth both at apex and along the sides, and indusium thinner rolling back on maturity as developing sporangia push out from beneath).

The afternoon was spent in wetter woods (alder-ash-oak and birch) to the west of the Bonet river, the county border with Leitrim, as the river enters L. Gill. *Dryopteris* again abounded and the commonest fern was *D. × deweveri.* On our homeward journey we searched for *Polypodium* Cv. 'Cambricum' recorded at Doones Rock; only *P. australe* s.s. was found.

Wednesday saw us back in Fermanagh when we walked up Marble Arch Glen to see *Equisetum pratense* on moist flushed hillsides under hazel, holly and ash. The stand was extensive covering, albeit sparsely, over 50 sq. metres. All the expected woodland ferns abounded and at the caves we found *Cystopteris fragilis* abundant and luxuriant being highly compound in leaf-cutting.

After lunch we drove up onto the moor to see limestone pavement and sinkholes scattered in heather moorland with *Asplenium adiantum-nigrum, scolopendrium, trichomanes* and *viride,* more *Cystopteris,* and *Polystichum aculeatum* and *P. setiferum. Gymnocarpium robertianum,* that rarest of Irish ferns was not found (nor has ever been in this County). At the head of a limestone valley a similar flora was found and on wet rocks both species of *Hymenophyllum*.

Thursday the party divided in the morning, some latecomers to the meeting who had missed the limestone cliffs at Peakadaw, Glenade, went back to see the *Polystichum* hybrids whilst the remainder looked for an old record of *Gymnocarpium dryopteris* on the slopes of Benbo, without success. (Both species of *Gymnocarpium* are on the Irish Protected List and one can realise why. Their absence is not easily explained).

The afternoon, with all assembled, saw us searching along narrow roads and small loughs in Cavan for *Equiseta* and *Isoetes. I. lacustris* was found in L. Carricknacrannog. On one road bank an extensive and dense population typical of E. × *litorale. E. arvense* was also on the bank and the other parent in a ditch of a nearby field. This plant contrasts so vividly with the hybrid of the same (?) parentage seen so frequently along lake margins. Can they really have the same genetic make-up?

Friday, our last day, we again joined the Crighton family and explored the Ox mountains in west Sligo. In 1929 a Miss L.E. Crofton found *Trichomanes speciosum* under a boulder near L. Acree. It has not been seen in this site for over 20 years and was refound on this excursion. About 20-25 fronds exist and the chasm in which it grows is unlikely to be disturbed by natural means. Some of the party climbed a high gully to find *Dryopteris affinis* (both ssp.) *D. dilatata, D. filix-mas, Hymenophyllum wilsonii, Huperzia selago, Phegopteris, Polystichum aculeatum* and *Selaginella*.

Later that afternoon we searched in vain for *Adiantum capillus-veneris* in a limestone gorge at Dromore West. After we left Joan Crighton went back and found a substantial colony on tufa on the Dunniel River nearby.

The party broke up on Saturday morning, but three of us not crossing the Irish Sea until late in the day explored the remote areas north of Slieve League in Donegal to see *Pilularia* in Kiltyfannad Lough. In a nearby lake we found more of what appeared to be that common riparian *Equisetum* - × *dycei*.

Without any doubt the BPS meeting in Ireland was successful. We made new friends and saw many interesting ferns and beautiful sites. Like in Britain water was scarce and pollution from fertilizer and pig farming a threat. So was the plastic garbage so frequently tipped into the local river. Afforestation of conifers may well be changing the native deciduous woodland but as a habitat for ferns the mature forest is fine whatever the species of tree, provided there is a source of spores when the forest is well established. The close-set younger plantations being dark and dry are however veritable fern-deserts.

My thanks particularly goes to the local botanists — Ralph Forbes and Robert Northridge in Fermanagh, Ralph Sheppard in Donegal and Daniel Kelly (sec. Irish Branch BSBI) and Jim White of Dublin. To Joan and Alec Crighton we owe much for their generous hospitality and local guidance. Maura Scannell gave help in so many inconspicuous ways that few will realise her real contribution. It would not have been so successful without her. We must go back.

A C Jermy

BAMPTON GRANGE — 10-11 August — When Kathy Kavanagh asked me run a meet in the Lake District she suggested we should explore a new area rather than revisit known delights. I chose the Eastern fells, which are on a smaller scale than the central fells, less visited but no less beautiful. I was rather apprehensive for all that: it is the dry side of the Lake District and our visit was preceded by a long drought. Haweswater has never been so low and several members went to see the ruins of the drowned village of Mardale fully exposed for the first time. I had also been a little concerned that we would be all indians and no chiefs and was relieved and delighted to welcome the good company and expertise of Jimmy Dyce and Clive Jermy and Martin Rickard.

On Friday morning about 15 of us walked up the Naddle Valley. The sides of the valley are wooded but heavily grazed and show few ferns but *Pteridium aquilinum, Oreopteris limbosperma* and polypodies on the trees. The beck in the valley bottom and a north facing gulley down the side of the valley were more rewarding and we found *Athyrium filix-femina, Blechnum spicant, Cryptogramma crispa* (a frond or two only on this site) *Dryopteris dilatata* and *D. filix-mas, Gymnocarpium dryopteris* and *Phegopteris connectilis* in large drifts up the side of the gulley, *Polystichum aculeatum, Polypodium vulgare* and possible *P. interjectum.* Most of the party then walked on over the hill and dropped down to Haweswater for a pub lunch. A few went further to a deep narrow gulley and reported some fine clumps of *Dryopteris oreades* as well as *Asplenium trichomanes* and *Hymenophyllum wilsonii.*

In the afternoon we went on an energetic and glorious walk up Measand Beck on the northern side of Haweswater to explore Fordingdale Force. We passed a herd of fell ponies on the way including several mares with foals at foot. Fordingdale Force is another north facing gulley and the flora were predictably similar. The parsley fern was very abundant in the screes and we added *Cystopteris fragilis* and *Selaginella selaginoides* to our list.

On the top of the ridge we looked across Haweswater at the range of crags on its southern side, where Clive Jermy speculated *Asplenium septentrionale* might grow — we must go back. Harter Fell to the west carries *Polystichum lonchitis,* and I was once told that *Woodsia ilvensis* had been found there.

On Saturday we visited Swindale. We had barely stepped from the cars when we saw a mink (evil but beautiful) working up the stream. It was a blazing hot day and there were some excellent reasons for not climbing to the highest crag. The head of the valley is a very complex area of steep rocks and gullies and the party spread out to explore it thoroughly. It is extremely rich. We saw again all the ferns we had seen the previous day(the *Dryopteris oreades* was notably plentiful and spectacular) and added to them *Dryopteris affinis* subsp. *affinis* and *borreri.* Clive made a bee-line for a likely spot and found sure enough *Dryopteris affinis x oreades.* There is a deep gulley carrying a waterfall — where we found *Hymenophyllum wilsonii* again — a particular pleasure for me because I had failed to find it there years ago when I had looked, not knowing quite what I was looking for.

There must be some alkaline rock in the crags because we found there too *Asplenium viride, A. trichomanes, A. ruta-muraria,* quite a lot of *Cystopteris fragilis* and *Polystichum aculeatum.* Those in the valley who heard a great cheer thought we must have found a Woodsia at least: in fact it acclaimed the rescue of Clive's bag containing vital fronds of that interesting hybrid.

We had lunch by Mosedale beck. A few frivolous members swam. Rather more, idly watched. Nick Hards found *Selaginella selaginoides* and *Huperzia selago* and narrowly failed to drop his camera lens in the stream.

Martin Rickard (who else?) proved us wrong: *Oreopteris limbosperma* can yield varieties — "Revolvens" (what else?)

Again we walked over the fell and down a gulley, Gowther Crag Gill. We saw nothing new but it was a delightful scramble with plenty of ferns. *Dryopteris affinis x oreades* was there again and plenty of *Hymenophyllum* although I fear much of it was dried beyond recovery in the drought.

We all assembled at the Crown and Mitre in Bampton Grange that evening for an excellent dinner in good company (the inaugural meeting of the Jimmy Dyce Dining Club). A productive visit to the local churchyard allowed us to put *Equisetum arvense* in the flower (well fern mostly) arrangements on the tables. On Sunday morning we went east to the limestone pavements of Great Asby Scar with the sun still shining relentlessly. We did not, as we hoped we might, see *Polystichum lonchitis* but *P. aculeatum* was there and the other familiar limestone ferns, *Asplenium viride, A. trichomanes, A. scolopendrium* (some fine plants but dry), *Cystopteris fragilis,* and *Gymnocarpium robertianum* and *Dryopteris submontena* (=*villarii*) both in abundance. Unexpectedly there was some *Blechnum spicant* in the sides of swallet holes and in some quantities other familiars of the previous two days — *Athyrium filix-femina* (including a nice crested form) *Dryopteris affinis* subsp. *affinis* and *borreri, D. filix-mas,* and the universal *Pteridium aquilinum.*

After a pub lunch in Great Asby some of the party with long journeys ahead set off, but Russell Smith from Sedbergh kindly took a few diehards to a small marshy nature reserve of the Cumbria Naturalists' Trust at Tarn Syke. There grew *Equisetum arvense, E. fluviatile* and *E. palustre.* It was a hot day, and our party was already diminished and it was time to go home — I confess we did not search for hybrids with the enthusiasm the site deserved, but it was a delightful bonne bouche to round off the weekend.

R Sykes

BANGOR, NORTH WALES, 25-27 August, Joint BSBI/BPS Meeting

Twenty members from as far afield as Kent and Sutherland spent an enjoyable three days botanizing in the vice counties of Anglesey and Caernarfonshire, two areas which display stark contrasts in their physical, biological and cultural fabric. The first day was spent on Anglesey where we visited four coastal sites and one site inland. Six species of horsetails were found, including both *E.* × *litorale* and *E. variegatum* in quantity at Newborough Warren National Nature Reserve, where the abundance and vigour of *Selaginella selaginoides* in the dune slacks was also notable. *Ophioglossum vulgatum* was showing no ill effects from the prolonged drought when we stopped off at another coastal site, Tywyn Fferam, 7 miles further north, and neither was *Pilularia globulifera,* still happily partially submerged in a shallow pool inland at Mynydd Bodafon. *Thelypteris palustris* was seen at the valley lakes 4 miles SE of Holyhead where it grows more abundantly then anywhere else in Wales. Our final tally of ferns and fern allies was increased to 23 when we visited Red Wharf Bay on the east coast of Anglesey where *Polypodium australe* flourishes in a shaded exposure of chlorite-schist and hedgerow pteridophytes include *Polystichum setiferum* and *Equisetum telmateia.* Flowering plant highlights on the first day included *Pyrola rotundifolia* ssp. *maritima* and *Dianthus deltoides* on the dunes at Newborough, *Ranunculus lingua* at Tywyn Fferam, *Butomus umbellatus* at the Valley Lakes and *Hypericum elodes* at Mynydd Bodafon.

The remaining two days were spent in Snowdonia where we saw 20 additional taxa of ferns and fern allies and a selection of montane flowering plants. Three sites, a few miles north-west of Betws-y-coed, proved very rewarding. At the first, 10 acres of bog and heath known as Cors Bodgynydd and managed by the North Wales Naturalists' Trust as a nature reserve, we admired one of Wales' last surviving colonies of *Lycopodiella inundata* and discussed its unusual semi-aquatic ecology. It was interesting to see *Selaginella selaginoides* growing nearby, probably influenced by water draining from an old copper mine adit. In another part of the reserve *Utricularia minor* still flowered profusely amidst tufts of *Rhynchospora alba.* A crested form of *Blechnum spicant* was another good find.

Half a mile downstream we were well pleased to count over 30 *Osmunda regalis,* a scarcity in Snowdonia, and to renew our acquaintance with *Parnassia palustris* and *Hypericum elodes.* On a third site nearby we were impressed by the luxuriance and quantity of *Asplenium septentrionale* growing on the spoil heaps of an old lead mine. A few plants of *Asplenium trichomanes* spp. *trichomanes* were also recorded here but a search for the hybrid *A.* × *alternifolium* proved fruitless.

Seven miles westwards the Ogwen Valley supplied the interest for the remainder of the weekend. Beneath the northern cliffs of Tryfan's 3000ft peak we were able to compare *Hymenophyllum wilsonii* and *H. tunbrigense* and observe the mighty megaspores of *Isoetes lacustris* in nearby Llyn Ogwen. Nant Ffrancon's scree slopes provided us with a few talking points mainly in the shape and form of *Dryopteris spp.,* which included *D. filix-mas, D. dilatata, D. affinis* ssp. *borreri, D. affinis* ssp. *affinis* and *D. oreades.* A possible hybrid between the last two mentioned taxa was carefully examined. It was interesting to note just how fertile *D. oreades* can be — many of the specimens had just as many sori per pinnule as *D. filix-mas* or *D. affinis. Cryptogramma crispa* was widespread even to the extent of thickly colonising the garden wall of a farmhouse. Further up the valley a vertical stream bank shaded by oak and birch and dripping with large fronded *Phegopteris connectilis* was an especially fine sight.

Finally, Cwm Idwal, which proved to be the richest site visited with 20 taxa of ferns and fern allies to its credit including several new ones for our list — *Lycopdium clavatum, Diphasiastrum alpinum, Asplenium viride, Gymnocarpium dryopteris* and *Cystopteris fragilis.* The great block scree below Twll Du, the Devil's Kitchen, proved the richest hunting ground particularly where it consisted of debris derived from calcareous pumice tuffs in the cliffs above. There were some choice flowering plants associated with such blocks — *Saxifraga oppositifolia, Minuartia verna, Silene acaulis, Sedum rosea, Oxyria digyna, Festuca vivipara* and *Selaginella selaginoides.* Finally to remind us of our first day's excursion again we found *Pilularia globulifera* at the southern end of Llyn Idwal.

N. Brown

SYMPOSIUM FIELD MEETING 1983*

The nine day field excursion was organized by A C Jermy and K P Kavanagh, and led by them plus C N Page and M A Barker, each for part of the week. We met in London, travelled across England, the length of Wales, and through the English Lake District to Edinburgh. There were, aside from the leaders, twelve participants from five countries. In addition, at various points in the trip, additional members of the British Pteridological Society added their local pteridological expertise. During the week, a total of 58 taxa of pteridophytes were seen, including 12 fern allies and 7 fern hybrids. This represents 56% of the 104 British pteridophytes, and includes virtually all of the widespread taxa, plus several of the more local ones.

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*Printed here as lack of funds prevented publication in Symposium *Proceedings* as originally intended.

SITES OF PTERIDOLOGICAL INTEREST EXAMINED

ASHAM WOOD, Leigh-on-Mendip, 5 km SW of Frome, Somerset (v.-c. 6. NGR 31/705445. Altitude c.175m)

Fraxinus excelsior - Quercus robur - Ulmus glabra woodland over limestone. Understorey of *Corylus avellana, Crataegus monogyna, Prunus spinosa.* Herbs: *Allium ursinum, Circaea lutetiana, Fragaria vesca, Geranium robertianum, Hedera helix, Holcus lanatus, Lactuca muralis, Lysimachia nemorum, Mercurialis perennis, Oxalis acetosella, Primula vulgaris, Veronica chamaedrys.* This site privately owned by quarrying company and presently under threat provided a valuable introduction to the more common British pteridophytes, and especially to those of more lime-rich woodland. Among boulders were seen abundant *Asplenium scolopendrium, A. trichomanes* subsp. *quadrivalens, Dryopteris filix-mas, D. affinis* subsp. *borreri, D. dilatata, Polystichum aculeatum* and *Polypodium interjectum.* Also recorded from this site amongst limestone boulders or rock faces are *Asplenium adiantum-nigrum, Cystopteris fragilis, Polypodium vulgare* and *P. x mantoniae.*

BLACK CLIFF Forest Park, 2 km S of Tintern Parva, Monmouth (v.-c. 35. NGR 31/532984. Altitude 100-200m)

A Carboniferous Limestone outcrop, covered in mature woodland of *Fraxinus, Quercus, Ulmus, Fagus sylvatica* and *Taxus baccata* with *Clematis vitalba* liane. Herb layer includes *Brachypodium sylvaticum, Carex digitata, Deschampsia cespitosa, Galeobdolon luteum, Gernaium robertianum, Hedera helix, Oxalis acetosella, Prunella vulgaris, Rubus fruticosus, Silene dioica;* the moss *Thuidium tamariscinum* covers much rock. The topography of tall cliffs with sink-holes and collapsed caverns is different from the Asham Wood site. Cool air escaping from underground caves markedly affects the temperature. There are numerous outcrops of limestone in the form of cliffs and tumbled boulder slopes. The habitat is a sheltered and relatively undisturbed one, and ferns form a particularly high component of the herbaceous vegetation. Ferns present include *Asplenium trichomanes* subsp. *quadrivalens, A. scolopendrium, Cystopteris fragilis, Dryopteris affinis, D. dilatata, D. filix-mas,* and *Polypodium interjectum. Asplenium trichomanes* was probably abundant on most shaded rocks around sink-holes, *A. scolopendrium* and *Dryopteris affinis* on the forest floor, and *Polypodium interjectum* on tumbled boulder-tops. Some hybrid *Polypodium* would also be expected here.

RAVENSNEST WOOD, Tintern, 3 km W of Chapel Hill, Monmouth. (v.-c. 35. NGR 31/503999. Altitude 150m)

A site with damp woodland beside a small stream. Soil is a rich peaty loam over Old Red Sandstones. Trees in this area are *Alnus glutinosa, Corylus avellana, Salix atrocinerea;* herbs include *Cardamine pratensis, Chrysosplenium alternifolium, Rubus fruticosus* and *Urtica dioica.*

Ferns present include *Athyrium filix-femina, Blechnum spicant, Dryopteris carthusiana, D. x deweveri* (?) and *D. dilatata.* By woodland paths ('rides') nearby, these and *D. affinis* are also abundant, and *Oreopteris limbosperma* may be seen in its woodland setting. *Polypodium x mantoniae* occurs on roadside banks, together with *P. vulgare.*

CLEDDON NATURE RESERVE, Llandogo, Trelleck United, Monmouth. (v.-c. 35. NGR 32/521041. Altitude 80-150m)

A steep wooded hillside with an attractive stream falling over sandstone and intermittent harder conglomerates. Trees here are *Fagus sylvatica, Fraximus excelsior, Ulmus glabra* with *Corylus avellana* and much introduced *Laurus.* Herbs in the wetter areas include *Angelica sylvestris, Galeobdolon luteum, Geranium robertianum, Glechoma hederacea, Holcus lanatus, Lapsana muralis, Luzula sylvatica, Melica uniflora, Mentha aquatica, Mercurialis perennis, Milium effusum, Ranunculus repens, Stellaria nemorum subsp. glochidosperma.* The many bryophytes include *Conocephalum, Mnium punctatum* and *M. undulatum.* The valley has abundant ferns, including *Dryopteris affinis, D. dilata, D. filix-mas, D.* x *tavelii, Polystichum aculeatum, P. setiferum* and *Athyrium filix-femina.* Large clumps of the two *Polystichum* afforded a good chance to compare these, as well as to contrast the differences in the subspecies of *D. affinis,* subsp. *affinis* and subsp. *borreri,* which were both present in abundance. Extensive prothallial recolonisation was noted on eroding slopes of wet clay, with young plants of *Polystichum setiferum* and *Asplenium scolopendrium.*

WIMBERRY SLADE, Forest of Dean, 2 km NW of Coleford, W. Gloucestershire. (v.-c. 34. NGR 32/593122. Altitude c.150m)

Situated on the west side of the Forest of Dean, an ancient hunting forest now long depleted of its forest cover but gradually being replanted by the Forestry Commission. The Forest of Dean, once all of the triangular plateau between Ross-on-Wye, Gloucester and Chepstow, was a rich source of timber for the royal dockyards in the time of Elizabeth I and Lord Nelson. Nearby, Symonds Yat Rock c.150m, stands at the neck of a particularly large meander of the River Wye round Huntsham Hill and offers panoramic views of the surrounding country.

Wimbery Slade is a short narrow valley with old sandstone quarries which give ideal habitats for ferns. Tree species are *Betula pubescens, Fagus sylvatica, Quercus petraea, Sorbus aucuparia,* and *Pinus, Abies* and *Larix* have been planted. In the herb layer, *Deschampsia flexuosa, Galium saxatile, Oxalis acetosella, Viola riviana* occur. Ferns here include, besides the common *Pteridium aquilinum, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* agg. *D. dilatata* and *Gymnocarpium dryopteris* (rare and on the southern edge of its range) and *Polypodium vulgare* agg.

BEGWN HILLS, Llandewifach, c.8 km N of Glasbury-on-Wye, Radnorshire (v.-c. 43. NGR 32/162435. Altitude 326m)

A pond fed by a spring around the edge of which is *Pilularia globulifera,* a not uncommon plant in such ponds in this part of Wales. With it is *Juncus kochii* and *Sphagnum angustifolium.* The pond is situated in a *Ulex europaea - Pteridium -Agrostis tenuis* heathy grassland, which is grazed by sheep and cattle. The surrounding country from here on into North Wales included frequent and particularly extensive patches of bracken in awesome amounts to visitors from overseas!

LLYN PENDAM, c.2km ENE of Aberystwyth, Cardiganshire (v.-c. 46. NGR 22/708838. Altitude 350m)

An interesting lake with an abundance of submerged *Litorella uniflora* and *Isoetes echinospora* and at its western end large areas of these species are emergent in times of low water, in about 25cm of soft mud with *Sphagnum auriculatum.* Around the lake is typical *Carex rostrate, Eleocharis palustris, Juncus kochii* and *Sparganium erectum.* A *Molinia caerulea-Carex* spp. mire drains into the lake.

The frequency of *Isoetes* can be judged not only by the numerous plants visible from the surface through the particularly clear water, but also by the very considerable strand-line density of washed-up quills.

CWYMSYMLOG, Trefeirig, 11km. ENE of Aberystwyth, Cardiganshire. (v.-c. 46. NGR 22/698837. Altitude c.280m)

This is a one-time active silver-lead mine, now disused, with extensive areas of tailings, mine adits and mortered walls of former buildings remaining. There is an interesting juxtaposition of species: *Cystopteris fragilis* in the wheel-pit, *Asplenium septentrionale* on the acid dry-stone walls, *Botrychium lunaria* in rough *Agrostis/Festuca* grassland with *Campanula rotundifolia, Galium saxatile, Jasione montana.* A large cave mouth provides suitable ground for gametophyte/young sporophyte establishment, and *Asplenium ceterach* occurs with locally abundant *A. adiantum-nigrum, A. septentrionale* and *A. trichomanes* on old walls.

TAN Y FOEL, 3 km SSE of Llanfachreth, Merioneth (v.-c. 48. NGR 23/766206. Altitude c.75m)

This is a site of shady roadside retention walls, some with mortar others without, in which *Asplenium trichomanes* subsp. *trichomanes* (2x) (the calcifuge) and *A. trichomanes* subsp. *quadrivalens* (4x) (the calcicole) grow close together. It is a classic site for the 3x hybrid of the two subspecies of *A. trichomanes,* first found here by Peter Beroit, who joined us in researching for this plant. Other wall ferns including *Asplenium ceterach* and *Dryopteris affinis,* are abundant. Near Barmouth, the party stopped to briefly examine *Asplenium billotii, Polypodium vulgare, P. interjectum* and the hybrid *P.* x *mantoniae,* growing on sunny exposed walls at low altitude. At a stone bridge at Torrent Walk, 3km east of Dolgellau, *Cystopteris fragilis* occurred in abundance, and *Dryopteris* x *deweveri* grows in nearby woods.

COED GANLLWYD, c.5km N of Llanelltyd, Merioneth. (v.-c. 48. NGR 23/724245. Altitude 150m)

The Afon Gamlan runs through a typical west Wales sessile oak wood (*Quercus petraea*) with *Betula* spp., *Fagus, Fraxinus* and *Sorbus aucuparia* and by the stream *Alnus glutinosa* and *Frangula alnus.* Undershrubs include *Corylus* and *Ilex aquifolium.* Herbs on the wet banks where water seeps through include *Agrostis stolonifera, Holcus mollis, Juncus acutiflorus* and on the drier banks *Deschampsia flexuosa, Lonicera periclymenum, Rubus fruticosus* and *Vaccinium myrtillus.* The woodland was particularly rich in ferns. Species present include *Athyrium filix-femina, Blechnum spicant, Gymnocarpium dryopteris, Phegopteris connectilis* and an assemblage of *Dryopteris* (*aemula, affinis, carthusiana, dilatata,* x *deweveri,* and *filix-mas.* This is also an impressive waterfall and on the wetter rocks *Hymenophyllum tunbrigense* and *H. wilsonii* may be found. Mosses are abundant and *Leucobryum* and *Dicranum scoparium* dominant. The lower part of the valley is a National Nature Reserve.

LLYNNAU BODGYNYDD, Aberconwy, 4km N of Betws y Coed, Caernarvon (v.-c. 49. NGR 23/767595. Altitude 250m)

This site managed under lease by the North Wales Naturalist Trust, is the only site for

Lycopodiella inundata in Wales. Here it grows on bare peat beside pools in bog area around the lake. The mire association is dominated by *Molinia caerulea* with *Erica tetralix, Narthecium ossifragum* and *Myrica gale,* and *Selaginella selaginoides* and *Dryopteris carthusiana* were also present. The site is fragile and over-trampling could radically change the hydrology.

CWM IDWAL, north side of Glyder Fawr, 7km SSE of Bethesda, Caernarvon (v.-c. 49. NGR 23/642590. Altitude 400-600m)

Cwm Idwal was established as a nature reserve in 1954 and leased by the National Trust to the Nature Conservancy Council, and is noted for its arctic-alpine plants and varied geology. There is a mixture of rock—schists and gneisses with intrusive igneous rocks of a more basic nature interspersed with acid Silurian grits. The cwm (corrie) shows many signs of glaciation such as hanging valleys and rocks scored by the ice. Llyn Idwal now fills much of the cwm which is overhung by the precipice of Glyder Fawr, to the right of which is the dark cleft of Twll Du, the Devil's Kitchen. The geological strata marking the base of the Snowdon syncline are exposed on these cliffs.

The large block scree of Twll Du of the Devil's Kitchen has much *Hymenophyllum wilsonii* with *Asplenium viride, Cystopteris fragilis, Gymnocarpium dryopteris* and *Phegopteris connectilis.* On more acid screes *Cryptogramma crispa* is common with *Alchemilla alpina, Calluna, Erica cinerea* and *Vaccinium myrtillus.* On ledges *Huperzia selago* is found and on the more basic slopes *Lycopodium clavatum* and *Diphasiastrum alpinum.* In the wetter flushes is *Selaginella selaginoides.*

In Llyn Idwal, the lake in the base of the corrie, *Isoetes echinospora* grows with *Equisetum fluviatile, Litorella uniflora, Lobelia dortmaniana* and *Menyanthes trifoliata.*

CWM GRAIANOG, Nant Ffrancon, c.3km NW of Llyn Ogwen, Caernarvon (v.-c. 49. NGR 23/630625. Altitude 200-600m)

Much of the Snowdonia National Park is a wild, mountainous region with many sheer crags and knife-edge ridges, between which are ice-gouged corries and valleys. The Nant Ffrancon pass begins to the south of Bethesda. It is a glaciated valley with classic U-shaped profile and was carved by a large glacier from Cwm Idwal and smaller flows from other cwms or hollows on the western side, such as Cwm Graianog. To the east are views of the Carneddau Mountains, the highest in Wales after Snowdon. Welsh mountain sheep graze the uplands.

The rugged precipitous mountains of Snowdonia are Ordovician in origin and largely igneous andesitic or rhyolitic lava, tufa and agglomerates, relatively resistant to denudation. Cwm Graianog is a mountain side of scree on otherwise acid grassland of *Agrostis canina, A tenuis, Molinia caerulea* and *Nardus stricta* with *Calluna vulgaris, Erica cinerea* and in the wetter flushes an assortment of *Carex* spp., *Juncus effusus,* the moss *Polytrichum commune* and several *Sphagnum* spp. The lower screes contain a wealth of *Dryopteris* species (*D. affinis* (3 sub-species), *D. filix-mas, D. oreades* and various hybrids) and *Cryptogramma crispa.* In the upper block scree is *D. dilatata, D. expansa* and possible hybrids. *Hymenophyllum wilsonii* is also in the deeper clefts as are *Gymnocarpium dryopteris* and *Phegopteris connectilis* and *Asplenium trichomanes* subsp. *trichomanes.* Much pteridological discussion centred around the possible identities of the various large, abundant, and differing clumps of the parents and suspected hybrids in the *Dryopteris filix-mas* group at this site.

PENTRAETH, road between village and coast, 6km NNE of Menai Bridge, Anglesey (v.-c. 52. NGR 23/530790. Altitude 30m)

Anglesey, 'Isle of the Straits' (Norse 'ongull' = strait) is called in Welsh Ynys Môn. It is a complex of geological strata from Carboniferous Limestone through to Pre-Cambrian in the western extremity, and at South Stack grits, grey-wackes and sandstones meet the Irish Sea in 120m cliffs. The undulating agricultural landscape is scattered with stone-walled villages amongst cornfields.

The roadside banks in this area have a profusion of ferns — *Dryopteris affinis, D. filix-mas, Polystichum aculeatum* and *P. setiferum. Polypodium* is also abundant. R H Roberts, who has studied *Polypodium* in this area for many years, was able to show the party all three species: *P. australe, P. interjectum* and *P. vulgare,* and the three hybrids: *P.* × *font-queri, P.* × *mantoniae* and *P.* × *shivasiae.* The first and last of these, involving *P. australe* in their parentage are rare in Britain.

PLAS LLIGWY, Penrhos Lligwy, c.6km SE of Amlwch, Anglesey. (c.-c. 52. NGR 23/493862. Altitude 50m)

This is a *Fraxinus excelsior - Ilex aquifolium* wood with *Fagus sylvatica, Prunus padus, Taxus baccata* and *Ulmus glabra* over Carboniferous Limestone karst topography. In the wet climate, ferns abound over this base-rich substrate. *Asplenium scolopendrium, Polystichum aculeatum, P. setiferum, Dryopteris affinis* subsp. *borreri, D. affinis* subsp. *robusta,* and *D. filix-mas,* are all present in large numbers, whilst all these species of *Polypodium* are present, with *P. australe* and *P. interjectum* in particular abundance. *Polypodium* at this site has been studied for many years by R H Roberts. One cliff face carries a colony of *Polypodium* × *shivasiae* of quite exceptional size.

HOLYHEAD MOUNTAIN, 3km W of Holyhead, between South and North Stacks, Anglesey (v.-c. 52. NGR 23/213892. Altitude 150m)

The cliffs on the western edge of Holy Island are grits, greywackes and sandstones and are for the most part precipitous. Cliff top vegetation is *Ulex gallica* with *Erica cinerea, Pteridium aquilinum.* Around the South Stack Lighthouse built in 1808 is spectacular cliff scenery and the home of razor-bills, cormorants, guillemots and gulls.

In occasional gullies of softer shaley rocks *Pteridium - Anthoxanthum odoratum* grassland may be underlain with *Dryopteris aemula* and *D. dilatata,* with *Rubus* and *Ulex.* In one gully, *D. aemula* forms almost a pure stand with *D. dilatata* and *Blechnum spicant* and the possibility of *Dryopteris* hybrids exists. Sea mists roll into these gullies and no doubt create the particularly suitable local environment for fern growth.

On the lower cliffs at Cytlau'r Gwyddelod, *Asplenium marinum* is present a few yards from the surf.

LAKES AT LLANFAIR-YN-NEUBWLL, c.7km SE of Holyhead, Anglesey. (v.-c. 52. NGR 23/309770. Altitude c.5m)

A lake system over shales, quartzites and pillow lavas receiving nutrients from salt laden winds as much as from ground water and derived from soil. Mire communities of *Phragmites australia - Phalaris arundinacea* with *Cyperaceae* and *Thelypteris palustris.* The latter is not common in Wales, and this locality is one of its several, local Anglesey sites.

NEWBOROUGH WARREN, SE Anglesey (v.-c. 52. NGR 23/427648. Altitude c. sea level)

Newborough is in the SW corner of the island. The Warren is an extensive sand dune system with ridges covered with *Ammophila arenaria* and *Salix repens* and dune 'slacks' with varying freshwater mire communities which include *Equisetum variegatum* and *Ophioglossum vulgatum.* At Llyn Rhos-ddu *Equisetum arvense, E. fluviatile* and the hybrid *E.* × *litorale* and *E. palustre* occur. On the rocky headland of Ynys Llanddwyn, a varied sequence of lavas, jasper, shales and limestones occur, and *Ophioglossum vulgatum* and *Botrychium lunaria* occur in herb-rich *Agrostis - Festuca* grassland amongst the rocky outcrops. The area is a National Nature Reserve.

HUTTON ROOF CRAGGS, 8km NE of Carnforth, Westmorland (v.-c. 69. NGR 34/551786. Altitude c.200m)

Hutton Roof is a limestone pavement high above the surrounding farm valley. It is an outstanding area of Carboniferous Limestone karst with extensive development of pillars ('clints') and fissures ('grykes'). The surface is often covered with a low form of *Prunus spinosus* and *Rubus* spp. The grassland is *Anthoxanthum odoratum, Cynosurus cristatus, Festuca ovina* and *Sessleria caerulea* with a species-rich herb component. In the grykes *Asplenium scolopendrium, A. trichomanes* subsp. *quadrivalens* and *A. viride* are to be found. *Dryopteris affinis* agg., *D. dilatata, D. filix-mas, D. submontana* (a tetraploid form of the European *D. villarii* complex), and *Gymnocarpium robertianum* are also here. In acid peat hollows *G. dryopteris* may also be present but hybrids have not been found in Britain. *Polystichum aculeatum* is present and the more alpine *P. lonchitis* has been recorded but not seen recently.

JOHNNY'S WOOD, Longthwaite, Borrowdale, Cumberland (v.-c. 70. NGR 35/255142. Altitude 125m)

The majority of peaks in the Keswick area are of Ordovician Skiddaw slates, dark greyish blue or black fine mudstone with no lime in them. The rocks of the central massif, however, are Borrowdale volcanics, also dating from the Ordovician era. The present landscape of lava crags, green hard slates and porphyries with occasional tufa and andesites is the result of several periods of folding and denudation by water and ice which carved out the steep ravines and corries. These rugged fells are a sharp contrast to the smoother slopes of Skiddaw to the north. Only on the periphery, as round Hutton Roof, remain any of the Carboniferous sediments which once covered the whole of the Lake District.

Much of the woodland in the Borrowdale valley is owned and managed by the National Trust. It is typical 'English' oak wood which on these acid slates and grits is dominated by *Quercus petraea* although *Q. robur* and hybrids will be present. The ground flora of mixed herbs and grasses, of which *Agrostis* spp., *Festuca* and *Anthoxanthum* are common, contains *Vaccinium myrtillus* and *Pteridium* in quantity.

In one coombe *Dryopteris* species abound, with hybrids, in a habitat with abundant mosses. Here are *D. dilatata* and *D. expansa* with the hybrid *D.* × *ambroseae* and several forms of *D. affinis, D. filix-mas* and *Oreopteris limbosperma* form large plants, whilst much of the surrounding hillsides carry extensive patches of *Pteridium aquilinum. Polypodium vulgare* occurs epiphytically and on rocks.

THORNEYTHWAITE FELL, Borrowdale, Cumberland (v.-c. 70. NGR 35/247128. Altitude 150m)

An area of acid *Molinia - Nardus stricta* grassland with large block scree, containing an assemblage of ferns in crevices and beneath boulders. *Cryptogramma crispa* is abundant and in areas where water drains down the steeper slopes *Oreopteris limbosperma.*

ASHNESS GILL, 3km S of Keswick, Cumberland. (v.-c. 70. NGR 35/272196. Altitude 200-Altitude 200-400m)

Ashness Bridge lies in a small valley between Derwentwater and Thirlmere. Ashness Gill has spectacular waterfalls. Above it is High Seat, 608m, a stony summit on a notoriously boggy, swampy ridge. The Gill is a typical Lakeland stream and gully with *Asplenium trichomanes* (both subspecies) and *A. viride, Cystopteris fragilis, Gymnocarpium dryopteris, Oreopteris limbosperma* and *Phegopteris connectilis.* Nearby Watendlath Tarn (NGR 35/275162) has *Isoetes lacustris, I. echinospora* has been found in only *one* of the several hundred lakes of this district.

GREY MARE'S TAIL AND LOCH SKEEN, 15km NE of Moffat, Dumfriesshire (v.-c. 72. NGR 36/170165. Altitude c.500m)

The Scottish Southern Uplands on Silurian greywacke, flagstones and shales, are mostly covered by mineral-poor grasslands. Moffat is the centre of a sheep-farming area. North of Moffat the hills and moorland are spectacular. Hart Fell, 796m, contains remnants of an arctic alpine flora and has *Dryopteris expansa, Polystichum lonchitis,* and an old record for *Lycopodium annotinum* and a number of high-level sedges. *Woodsia ilvensis* was also once common in this area. The Grey Mare's Tail is one of Scotland's highest waterfalls, where the Tail Burn drops 60m over a hanging valley as it flows from Loch Skeen to join Moffat Water. White Coomb, 808m, lies to the west. The rounded well-glaciated and now grazed hills on the base-poor, well-greywacke and grits with *Cryptogramma crispa* contrast with the wetter areas where *Oreopteris limbosperma* covers steep hillside. Above the loch a dwarf shrub community of *Calluna, Erica cinerea, Vaccinium myrtillus* and *V. vitis-idaea* has an interesting community of *Cryptogramma* interspersed with *Crystopteris fragilis* and *Dryopteris dilatata.*

A C Jermy, K P Kavanagh, J D Montgomery & F S Wagner

THE INTERNATIONAL GARDEN FESTIVAL, LIVERPOOL 1984

Between July 20—29, the Society exhibited a wide range of ferns together with an interesting centre feature of display boards that explained our Society and its activities at the International Garden Festival in Liverpool. Nigel Hall, as project director, had the difficult task of arranging for good quality plant material to be available to dress the exhibit and provide the information for the design of the centre boards. The latter was accomplished in a most attractive way by Miss Julie Ormston, a final year student on an Educational Design Course, supervised by Nigel Hall at Manchester Polytechnic. Society members in various parts of the country kindly donated both hardy and indoor potted ferns and were assembled before the Festival at the University of Liverpool Botanic Garden, Ness.

On my visit to the stand on July 20, I was extremely pleased to accept from the Festival organisers the award of a Silver Medal on behalf of the Society. I consider it a just reward to Nigel Hall and Julie Ormston and all those who worked so hard to make it such a success. Thanks are due to the President, A C Jermy, for providing all the transport at all hours of the day and night to get the ferns to and from the Festival, to Nigel Hall and Julie Ormston for presenting the Society to the public in such an interesting and attractive way, to Les and Joan Dugdale for manning the stand for five days and to all those members who gave their time to assist them.

A R Busby

Photo: Nigel Hall

SOUTHPORT FLOWER SHOW; 16—18 AUGUST 1984

A R Busby

In spite of the financial problems reported by me in last year's flower show report, the show goes on, for the time-being anyway. I know that the organisers were hoping for an attendance of some 90,000 but at the time of going to press, I had not heard any details of how this year's show had succeeded.

To those of us on the Society's stand, and in spite of good weather, the attendance did not seem particularly good. Ferns exhibited in the competitive classes were generally in very good condition in spite of this year's long dry summer. Mrs Hazel Key, the judge for fern classes, commented that the presentation of the ferns had improved tremendously. It is with great regret that I report that this year there were no entries for the Class 7. This class is for a large group of hardy British ferns arranged naturally in an area not exceeding 100 square feet. There are few growers today who can assemble such a quantity of large, well grown ferns and be able to afford to transport them to Southport. Are we ever to see an entry in this class again?

The prize winners of the other classes are listed in order of winning, as follows:

Class 8	Six hardy British ferns (Dissimilar) — Brian Russ (one entry)
Class 9	Six greenhouse ferns (Dissimilar) — J R White, Brian Russ (two entries)
Class 10	Three hardy British ferns — W Kirby, D J Kershaw, H C Shepherd, Brian Russ (five entries)
Class 11	Three foreign ferns (hardy in Great Britain) — Brian Russ, H C Shepherd, D J Kershaw (four entries)
Class 12	Three *Phyllitis (Scolopendriums,* now *Asplenium scolopendrium)* – Brian Russ, J R White, Alan Shellard (three entries).
Class 13	Three *Polystichums* – Brian Russ, J R White (two entries).
Class 15	Three *Athyriums* – J R White (one entry)
Class 16	Three *Dryopteris* – J R White, Brian Russ (two entries)
Class 17	Three *Aspleniums* (excluding *A. scolopendrium*) — Brian Russ (one entry)
Class 18	One British fern — A R Busby, H C Shepherd, W Kirby (seven entries)
Class 19	One greenhouse fern — Mrs H E White, Mrs E A Gibbs, J R White (seven entries)

The Society stand exhibited the usual display of potted ferns both hardy and indoor, together with Society literature and a spore germination display. Thanks are due to Les and Joan Dugdale who spent the entire three days on the stand and to Nigel Hall for his support on the Friday and Saturday.

FERN WINS NOTABLE AWARD IN HOLLAND

A R Busby

In the autumn of 1980, two Dutchmen who have a large fern nursery at Alsmeer, called to see me and asked if they could collect some spores. They took a good selection away with them.

In the autumn of 1982, I had a letter from Mr Z K Sahin who is one of the partners, to tell me that a one year old plant of *Dryopteris affinis 'Crispa Congesta'* was entered as a novelty in the 1982 International Floriade Exhibition in Amsterdam and had won the coveted "Floriade Certificate" for an outstanding new plant.

It was planted in an original Japanese Bonsai pot which gave it a 'superb setting'. Obviously he was delighted but so was I, as the spores came from my own plant which originated from Mr Askew who had the fern nursery at Grange in Borrowdale.

OBITUARIES

HERBERT JOHN BRUTY, 1910—1983

Herbert John Bruty, Bert Bruty to his friends and colleagues at Kew, died on December December 29, 1983.

Bert was born on 6th April 1910 at Stoke by Clare in Suffolk and commenced his horticultural career in May 1924 in private service near to where he was born and brought up. He was working as Propagator Gardener for Dowager Lady Loch at Stoke College at the time he was called up for war service in September 1939. Bert served in D Company 5th Battalion Suffolk Regiment and saw service in S E Asia where he was taken Prisoner of War by the Japanese and worked in forced labour camps. This was, of course, a period of great difficulties and hardship but the experience of tropical conditions and plant life was of great benefit in Bert's work with the collection at Kew.

Bert came out of the army in April 1946 and entered R.B.G. Kew that same year. He was awarded the British Empire Medal in the New Year Honours List in 1964. The medal was presented to Bert on April 29 at a ceremony in the Duke's Garden at Kew by the Lord Lieutenant of Surrey, Lord Munster. The citation says much about Bert's character and dedicated efforts with the collections at Kew. Parts of the citation read as follows: 'Mr Bruty was so keen to work at Kew that despite his considerable gardening experience he joined the staff in the only available vacancy in 1946 as a Labourer. After a year in that grade he became a Grade II Gardener and a year later in 1948 he was promoted to Gardener Grade I. Three months later Mr Bruty became a Temporary Foreman and was established in that grade in 1951. This was rapid promotion even for someone as well qualified as him'. The text goes on to say he was 'one of the foremost specialists in fern cultivation in the country, a fact widely known in horticultural circles. He has been responsible for developing the collection at Kew by intensive propagation and under his care there has been a tremendous increase in the range and variety of the collection. This has been achieved by his special skill in propagating material from spores'.

It is also of interest that Bert Bruty made it possible for Professor Manton to carry out a great deal of cytological work on tropical ferns by his efforts to keep them in cultivation at Kew. He managed to grow on ferns collected by her in Sri Lanka, Ceylon, along with other consignments from Professor Holttum from Malaya and from C.D. Adams who was then collecting in the Ghana (Gold Coast). The renewed activity in fern phylogeny and classification was increasing apace, with cytology providing of particular help and significance.

Bert retired from Kew on 30 September 1970 but continued to 'look in' on the fern collection on the annual British Pteridological Society visits each spring. To his wife Doris and his daughter we offer our kindest thoughts.

John Woodhams

MARK CHRISTOPHER CAIGER SMITH, 1933—1984

We were much grieved to learn of the sudden death of Dr Mark Smith in February this year. Mark had been a member of the Society since 1972 and had been active in its affairs over the last ten years. He was instrumental in expanding and maintaining a fine collection of both hardy and exotic ferns at Bristol University Botanic Gardens.

Most of the west country members will best remember spending summer afternoons at the Botanic Gardens, happy recipients of Mark's encyclopaedic knowledge, wit and erudition, and, not least of all, recipients of plants and ferns generously bestowed on all who expressed interest in the vegetable kingdom. We extend our sympathy to Mark's wife and children.

Mary Potts

MARY COKE (—1984)

West country members were saddened to learn of the illness and death of Mary Coke in June this year. Mary always gave a warm welcome to fern enthusiasts visiting Robin Hill to see Philip's wonderful collection of ferns. On garden open days, though confessing to no gardening knowledge, Mary was well able to hold her own amidst a sea of Pteridologists' small talk and in later years constructed and tended an attractive rock garden.

We shall all miss her wit and hospitality and extend our sympathy to Philip and his family.

Mary Potts

MARION BOLTON (—1983)

We learned a short time ago of the death, on July 9th 1983, of Marion Bolton, the widow of Tom Bolton who was President of our Society in 1958/60. The Bolton family have been closely linked with us since 1891 when they took a very active part in founding the Society, and the link still continues in Robert Bolton, their son, the present head of the well-known family nursery specialising in sweetpeas. To him and his family we convey our belated sympathy.

J W Dyce

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For further information write to:
Dept. of Forest Botany,
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The British Pteridological Society
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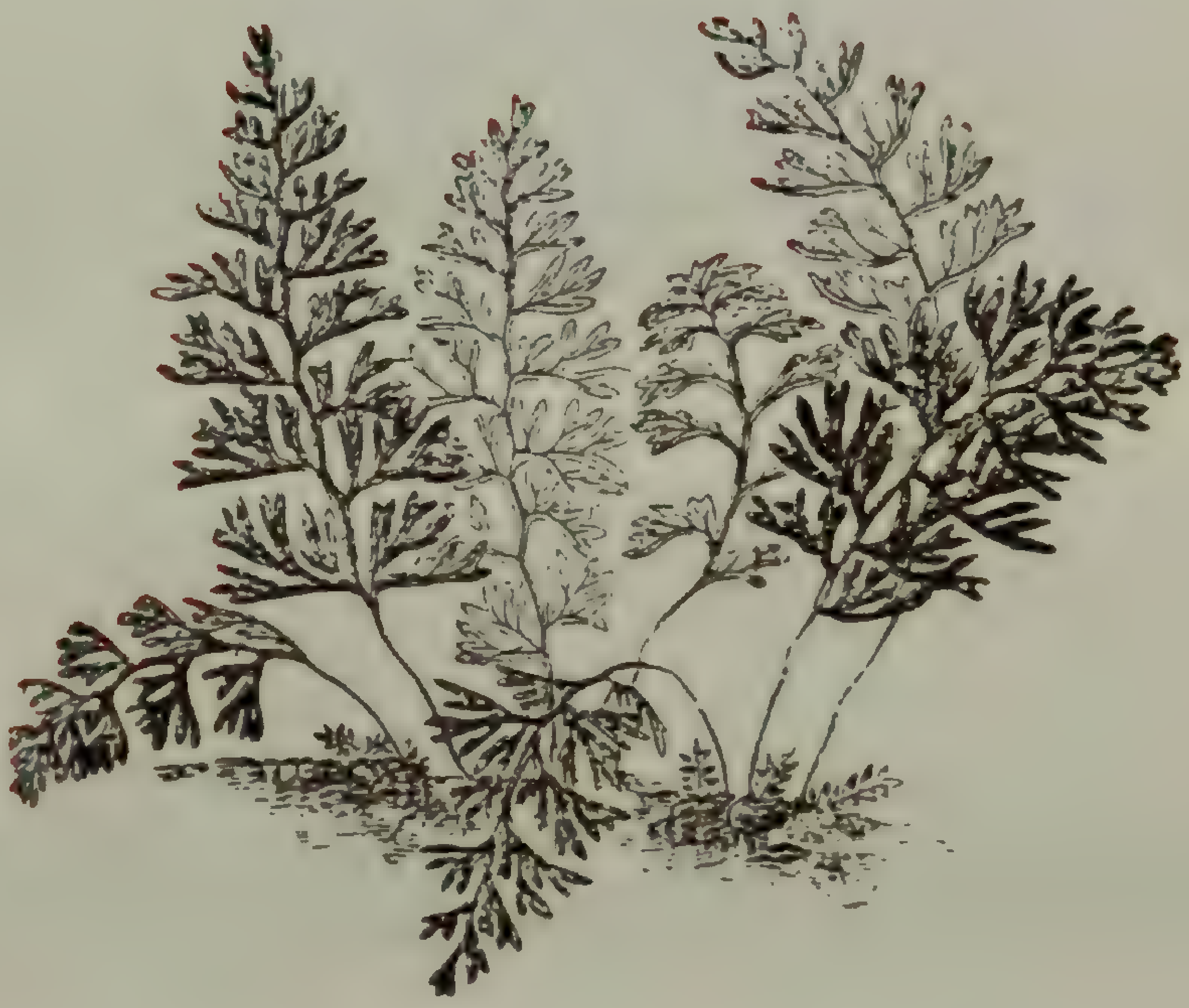

HYMENOPHYLLUM TUNBRIDGENSE
(The Tunbridge Filmy Fern)

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Edited by A.R. Busby

THE BRITISH PTERIDOLOGICAL SOCIETY

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The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges and a spore exchange scheme. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals the *Fern Gazette, Pteridologist* and *Bulletin* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist* topics of more general appeal, and the *Bulletin* Society business and meetings reports.

Membership is open to all interested in fern and fern-allies. Subscription rates (due on 1st January each year) are Full Personal Members £7; Personal Members not receiving the *Fern Gazette* £5; Student Members £5; Subscribing Institutions £8. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £0.50 extra to cover bank conversion charges).

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from the Treasurer (address above), from whom further details can be obtained.

THE

BULLETIN

OF THE

BRITISH PTERIDOLOGICAL SOCIETY

Vol. 3 **1985** **No. 2**

SECRETARIAL NOTES

MEETINGS CARDS — Meetings cards for 1986 are enclosed with this Bulletin to all inland members. Overseas members visiting Britain can obtain them on application to the Meetings Secretary.

PUBLICATIONS BY AIRMAIL — Our journals can be sent by airmail to overseas members, provided they advise the Membership Secretary and pay an additional subscription to cover airmail postage. Please note that due to the introduction of our new journal — 'PTERIDOLOGIST', the cost of airmailing the journals must be increased to £3.50 for those receiving all journals and £2.50 for those receiving only the 'Pteridologist' and the 'Bulletin'. The amounts should be sent with the annual dues.

COMMITTEE VACANCIES — In accordance with paragraph 3, section 3 of the Society's Constitution, three vacancies will occur due to the retirement of the longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1986. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 1 March 1986.

****

SUBSCRIPTIONS 1986 — Members are reminded that subscriptions for 1986 are due on the 1st January 1986 and should be paid to the Membership Secretary, British Pteridological Society, c/o Dept of Botany, British Museum (Natural History), Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'.

****

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY — Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. A small number of tickets are available for the Chelsea Show and the Great Autumn Show. These tickets will be allocated to members on a first-come-first-served basis. There are also two transferable tickets available for all other RHS Shows. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE — The American Fern Journal, a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND — This fund, set up as a memorial to one of our Society's great fern growers — Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorius achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

HONORARY GENERAL SECRETARY — CHANGE OF ADDRESS — Will members kindly note that with immediate affect, all correspondence to A R Busby should be addressed to him at 'Croziers', 16 Kirby Corner Road, Canley, Coventry CV4 8GD, Phone: 715690.

NEW BINDERS for the BPS BULLETIN — Binders for volumes of the BPS BULLETIN are available from the General Secretary. Attractively produced with red hardboard covers and gold blocked lettering on the spine: only £3.50 each, postage & packing included. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby.

ANNUAL GENERAL MEETING 1985

MINUTES of the 82nd ANNUAL GENERAL MEETING held at the City of Bristol Museum and Art Gallery, Queens Road, Bristol on Saturday, 16 February 1985 at 14.15 hours.

IN THE CHAIR: The President, A C Jermy.
PRESENT: P J Acock, Miss J Barker, D H Brown, A R Busby, Miss J Camus, J A Crabbe, M D Crane, L Dugdale, J W Dyce, D Gaunt, Dr M Gibby, J Hather, Mrs A Hill, G Hoare, Mrs D Holly, G Hutchinson, Mrs A Jermy, R King, Miss M Ladell, P Nethercott, A Ogden, A Pigott, C Potts, N Quansah, M H Rickard, Dr A Sleep, Dr B A Thomas, Mrs D Thomas, Mrs G Tonge, Dr A Willmot.

ITEM 1 — APOLOGIES FOR ABSENCE — Mrs W Baines, Miss M Barker, F Bayford, J Cramp, Mrs M Castellan, Lt Col P G Coke, Mrs B S Croxall, P J Edwards, Dr N Hards, Miss M Kingston, R P H Lamb, B S Mitchell, Dr C N Page, P Ripley, R J Rush, J R Woodhams.

ITEM 2 — MINUTES OF THE ANNUAL GENERAL MEETING held on 25 February 1984 were read and approved.

ITEM 3 — MATTERS ARISING from those minutes — None.

ITEM 4 — REPORT OF THE HONORARY GENERAL SECRETARY — 1984 has seen much in the development of our Society. During the past few weeks the membership list has been put onto a computer file which should make for easier work for the Society's officers and we must thank Anthony Pigott and Margo Ladell for their hard work organising and completing this task.

The Spore Exchange List has also been put onto a computer file and thanks are due to Miss Jennifer Ide for this. The Spore Exchange continues to be very popular with members and outside institutions. This year's list offers over 400 species and varieties. Again we thank Richard Cartwright for organising this service.

The Committee is now considering Richard Lamb's idea for a Plant Exchange Scheme and we hope to see this scheme implemented during the coming year.

The computerisation of the membership list coincides with the retirement of Lt Col P G Coke as Membership Secretary and the Committee thanks Mr Coke for all his unstinting hard work for the Society in that post.

Mr Coke's last duty was to advise me of the state of membership in 1984. He advises me that at the 31 December 1984 the Society comprises of 398 full members, 99 subscribers, 22 students, 73 no fern gazette members and 10 honorary members. Total membership 602, an apparent increase of 13 during 1984.

Throughout 1984, the Society has enjoyed another busy year with both field and indoor meetings well attended. Two particularly successful meetings were the meetings held jointly with the Botanical Society of the British Isles. These were the weekend meeting in County Sligo and Fermanagh and the long weekend in North Wales. In addition, the week excursion in Ireland proved very successful and was greatly appreciated by Irish Botanists.

Another high point of last year's meetings was the Society's stand at the International Garden Festival at Liverpool. From the outset, the project organiser, Nigel Hall, was determined that the Society should display its interests and activities to the visiting public and all his hard work and the excellent artwork provided by his final year student Miss Julie Ormston, was rewarded by the award of a Silver Medal to the Society by the Festival organisers. The Committee thanks Mr Hall, Miss Ormston and all our members who supplied plants for the stand, or gave freely of their time to man the stand.

Local groups continue to thrive in the Leeds area, South-West England and the West Midlands. The Committee is very pleased to see the formation of a regional group in south-east England. It is sad that we have not seen any group activities in north-west England and that the Scottish group has folded due to the lack of an organising secretary. Mrs Gwladys Tonge is hoping to organise a local group in the Buckingham area.

The past year has seen the introduction of our new journal the 'Pteridologist'. I am sure you will agree that it is an important event in the life of our Society and we congratulate its Editor, Martin Rickard, for so carefully attending its birth and giving us such an interesting and informative journal. 'The Fern Gazette' sees changes in its editorship with the retirement of Dr C N Page and the Committee thanks him for all his hard work over the last ten years.

The function of our third journal, the 'Bulletin', is to report the Society's business and activities and with the help and guidance of the Committee I shall try to maintain the high standard set by its previous editors.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 — REPORT OF THE HONORARY TREASURER — Dr B A Thomas presented his report verbally and circulated to the meeting copies of his balance sheet for 1984. Dr Thomas drew the meeting's attention to the fact that the Society's fund are now approaching the point where our current balance will begin to run into the red. He made out the case for increasing the subscriptions of the Society in 1987.

Dr Thomas's report and balance sheet were approved and adopted by the meeting and the President thanked Dr Thomas.

ITEM 6 — REPORT OF THE EDITORS:

'The Fern Gazette': Dr Mary Gibby — At the last AGM Dr Barbara Parris and Dr Mary Gibby were elected as joint editors with Dr Chris Page as the latter was heavily involved in editing the proceedings of the Edinburgh symposium on the biology of Pteridophytes. Drs Parris and Gibby took over the finalising of the 1984 'Fern Gazette' and, with the invaluable help of James Crabbe, have since then been involved in the preparation of Volume 13, part 1 and we hope to have this ready for the publisher in April, so that it will be completed for late summer. Articles for this issue have been sent from Nepal, East Germany, China, India and The Netherlands as well as Britain and Ireland and we already have some copy for Vol.13, Part 2. Dr Chris Page is now retiring as Editor and we are grateful for all his work over the past ten years.

'The Pteridologist': Martin Rickard — The first issue of the Society's new journal was published on time last year to meet the annual re-awakening of fern interest in the early spring. It seems to have been well received and will hopefully help to boost the public image of the Society.

As a new venture it incorporated several novel features, notably the introduction of a third annual mailing to members, more illustrations, black and white photographs on glossy art paper. Collection of papers all aimed at the amateur pteridologist. The term amateur is often misunderstood as meaning grower, but the target readership is much wider than that. All members will hopefully find something to their taste, albeit not normally at a technical level.

We were fortunate in that many members contributed good quality items for this initial issue. I hope in future more offers of articles will be forthcoming now that the style of contents has been set.

In future the last date for accepting copy will be 31 December. If items are received later than this the chances of making the next issue are greatly reduced and the opportunity for authors checking their proofs is non-existant.

Part 2 is currently on target and will be of a similar size to Part 1.

'The Bulletin': A R Busby — Now that the new journal has been launched so successfully, the 'Bulletin' will report the business and activities of the Society. It is important that its size and therefore its costs, are kept within bounds. So I urge members reporting meetings to keep them reasonably short and to the point. Prompt dispatch of reports to me will be appreciated as the date of publication of the 'Bulletin' is rather critical at the end of the year.

The reports were approved and adopted by the meeting and the President thanked the Editors for all their work over the past year.

ITEM 7 — FAMILY MEMBERSHIP — The Secretary, A R Busby, outlined to the meeting a new category of membership that will involve the whole family.

For an extra £2 paid in addition to the £5 or £7 subscription, both spouses or partners will be registered as Family Members. This will entitle both partners to full voting rights in Society matters and children up to the age of seventeen will be able to be involved in all Society activities. Families will still only receive one set of journals per year and members of families aged 18 years and over must take out a separate subscription to entitle them to voting rights, etc.

ITEM 8 — ELECTION OF OFFICERS AND COMMITTEE — The President was pleased to bring to the attention of the meeting the very long service of J W Dyce to this Society, and recalled that he had received every award this Society could bestow on a member.

M H Rickard reminded the meeting that Mr Dyce has held all the posts in serving this Society which he reckoned to add up to some 1 man years. The President went on to explain that the Officers and Committee wished to recognise once more Dr Dyce's service to the Society and the unique place he holds in its post-war history in this his 80th year.

The Officers and Committee were pleased to ask the meeting to confer on Mr Dyce the title of President Emeritus. This the meeting was pleased to do and greeted this decision with acclaim.

In reply, Mr Dyce thanked the meeting warmly for their kindness and observed that since first joining this Society in 1935 he had obtained much pleasure and friendship.

The President, A C Jermy, having completed his term of office retired at this meeting. As previously notified to the membership, the Committee was pleased to nominate Mrs Gwladys Tonge as the next President of this Society. Mrs Tonge's nomination was warmly approved and duly elected by the meeting. On taking the chair, Mrs Tonge thanked the meeting for giving her this honour and said that she would be pleased to serve the Society. Mrs Tonge's first act was to propose a vote of thanks to Mr Jermy for all his endeavours during the last three years, reminding the meeting that during his term of office and with his guidance, the Society had jointly sponsored with other societies the International Symposium on Pteridophyta, staged an impressive display at the Liverpool Garden Festival which received a gold medal from the organisers and has made many valuable contacts with other learned societies in the botanical world. The vote of thanks, seconded by the Secretary, was unanimously approved by the meeting.

The Honorary General Secretary, A R Busby, Honorary Treasurer, Dr B A Thomas and the Meetings Secretary, Miss Kathryn Kavanagh having agreed to stand for another year, were duly elected.

Two nominations had been received for the two vacancies occurring on the Committee; Dr Nick Hards (prop. A C Jermy, sec. D r B A Thomas) and Paul Ripley (prop. M H Rickard, sec. A C Jermy) had accepted their nomination and were elected to the Committee.

Mr M H Rickard was re-elected as Editor of the 'Pteridologist' and Dr M Gibby and Dr B Parris were re-elected as Editors of the 'Fern Gazette'. Dr C N Page retired as Editor in Chief of the 'Fern Gazette'. The President proposed a vote of thanks from the meeting to Dr Page for his unstinting hard work over some nine years as sole editor and for many years of service before that on the editorial board, seconded by A C Jermy, the meeting approved it unanimously.

The Secretary reported to the meeting that he had received a letter from Lt Col P G Coke explaining that he wished to retire from the post of Membership

Secretary, a post he has held since 1978. The President proposed a vote of thanks to Lt Col Coke for all his hard work in one of the most demanding posts in the Society. The motion was seconded by J W Dyce and warmly approved by the meeting.

ITEM 9 — ELECTION OF AUDITORS — John Cramp, who has acted as auditor to this Society for 8 years has indicated his desire to retire. The President proposed a vote of thanks to John Cramp and this was seconded by A R Busby and approved by the meeting.

Mr Jack Bouckley of Harrogate (prop. A C Jermy, sec. A R Busby) and Mr R P H Lamb of Daventry (prop. A R Busby, sec. M H Rickard) had notified their willingness to serve as auditors for the Society and were duly elected.

ITEM 10 — ANY OTHER BUSINESS — As there was no further business the President closed the meeting and thanked the members for attending.

A R Busby

FINANCIAL STATEMENT AS AT 31 DECEMBER 1984

ORDINARY ACCOUNT

EXTRACTS FROM 1983			
Income			
£4462.15	Subscriptions		£3771.47
	Donations		102.00
	Interest on Accounts		235.26
324.20	SALES – Booksales Profits	£50.00	
45.60	Offprints	31.00	
51.60	Leaflets	21.00	102.00
42.15	SUNDRIES		13.00
£5135.90			£4223.73
EXPENDITURE			
£ 863.00	METLOC – BULLETIN		£ 729.00
1476.00	METLOC – GAZETTE		1378.00
–	METLOC – PTERIDOLOGIST		1071.00
502.93	PRINTING AND STATIONARY		113.88
923.78	ADMINISTRATIVE COSTS & POSTAGE		1022.81
31.05	SUBSCRIPTIONS TO SOCIETIES		31.00
92.29	MEETINGS COSTS		83.10
	SOUTHPORT FLOWER SHOW		81.40
	LIVERPOOL FLOWER FESTIVAL		51.50
	ADVERTISEMENTS		20.00
£4233.23			£4581.69
902.67	BALANCE FOR THE YEAR		357.06 D.R.
3385.25	BALANCE CARRIED FORWARD		4287.92
£4287.92	BALANCE CARRIED FORWARD		£3930.86

PUBLICATION ACCOUNT

BALANCE CARRIED FORWARD FROM 1983		£ 365.00
SALES – Gazettes	£127.83	
Hardy Ferns	301.00	
Guide to Hardy Ferns	936.17	1365.00
		£1730.00
EXPENDITURE – Printing the Guide	1051.00	
Postage	200.00	1251.00
BALANCE CARRIED FORWARD		£ 479.00

GREENFIELD FUND

BALANCE CARRIED FORWARD FROM 1983	£1665.99
INTEREST	95.27
BALANCE CARRIED FORWARD	£1761.26

LECTURE MEETINGS AND VISITS

The Spring Indoor Meeting. Following the AGM our retiring President, A C Jermy, gave his address entitled 'The pteridologist — our role in science and society'. The theme of the talk was how all members can help to build up a scientific picture of our wild and garden fern floras. Conservation and distribution, areas traditionally linked with the amateur, were discussed, and rules by which wild and garden plants should be named were explained.

Immediately following this presentation the party were given tea by the staff at Bristol Museum, and after a brief introduction were invited to explore the herbarium, library and other interesting items held in the SW Regional Data Bank housed at the Museum. Of course this part of the meeting was also a good opportunity for members to get together. The material on display was the catalyst for the development of many interesting discussions. Being in Bristol some of us could not pass up the chance to discuss the first 'British Pteridological Society' with Museum staff. Unfortunately no new facts about the forerunner to our own Society emerged to add to our own extremely scant knowledge of it. However further research in the Museum archives is promised and may yet turn up something.

All in all this was a very successful meeting and the staff at the City of Bristol Museum and Art Gallery are to be thanked for being ideal hosts.

Martin Rickard

The Autumn Indoor Meeting was held on Saturday, 12 October at the British Museum (Natural History) in London when 24 members assembled in the Dept of Palaeontology. It was particularly pleasing to welcome Prof. Dr. Husnu Demiriz of Instanbul, Turkey who is on a working visit to Britain, to the meeting.

A handful of members had elected to speak to the meeting on a wide variety of subjects. First to address the meeting was Miss Alison Paul who gave a brief talk on the recent *Pilularia* survey. Alison described the distribution of this tiny fern which is often overlooked even by experienced field botanists. Although a fern which is in danger of disappearing from many parts of Europe, it was encouraging to learn that it is still widely distributed in the British Isles. However, wherever land-drainage or natural changes in the water table occur, it is placed in peril.

Alison illustrated her talk with many colour-slides showing typical habitats and her talk ended with a brisk questions and answers session.

Miss Josephine Camus continued the afternoons meeting describing the visit she and Clive Jermy made to Borneo in 1980. Josephine's talk was illustrated with many colour-slides not only of the fascinating fern flora but also of the other native plants and various economic crops. Josephine's particular interest is the Marratiales and she was able to show slides of several obscure species in this group. Whenever members describe ferny forays to exotic places I always get 'itchy feet' and this Society is very fortunate to have many members who have the opportunity to visit various parts of the world and are able to provide us with glimpses of the world's exotic ferns.

After refreshments kindly provided by Alison and Josephine, the meeting settled back to hear a 'regional report' by A R Busby, Jack Bouckley of Harrogate and Paul Ripley and Patrick Acock on the organisation of recent meetings in their respective areas. It quickly became evident that regional meetings play an important part in introducing new members to the Society and its activities.

There is a very active group in the south-west but sadly both the north-west and Scottish areas have not featured regional meetings for some time. Anyone wishing to set up a group in these or other areas will receive plenty of encouragement.

Rosemary Hibbs kindly brought along several colour-slides taken at the sherry reception at Jimmy Dyce's 80th Birthday Celebration at Kew in May this year. Thank you to Rosemary for reminding those of us who were there of a splendid occasion that will long be remembered with much pleasure.

The final talk was given by Anthony Pigott who described the complicated cytology of the *Dryopteris affinis* complex in a very clear manner. Anthony explained that there was much work to be done not only to complete what is already known but also to test many other hybrid possibilities that still remain theory. Thanks are due to Anthony for providing us with a stimulating talk in limited time and I feel that the membership would benefit from a well-planned 'workshop' to study closer this complex group.

A R Busby

Kew Gardens — 25 May. It was of those rare hot days with which we were blessed in May this year, when 65 members of the Pteridological Society crowded into the potting shed, with its glass roof, behind the fern houses, to hear a talk on *Lycopodium* and *Selaginella* by Clive Jermy and Peter Bradley. The gathering was particularly large on this occasion as many members had come to offer their congratulations and to celebrate with Jimmy Dyce, his 80th birthday. Probably, for comfort anyway, the more fortunate were the later arrivals who swelled the audience until it was pouring out through the doors of the potting shed, for the temperature inside was well into the high eighties with the humidity climbing that way also!

Clive Jermy began the afternoon by describing these interesting but little known fern allies, the diversity of structure and ecology within each genus, and features which distinguish one from the other. The biology was interspersed with interesting comments, such as the fact that the glaucous-blue irridescence of *Selaginella versicolor* is due to cuticular bubbles and that *Lycopodium* spores were used to produce stage flashes due to their high oil content, which makes them instantly combustible.

Whilst explaining that the very special growing conditions, particularly of high humidity, meant that *Lycopodium* species and many *Selaginella* species were difficult to grow, Peter Bradley described how to maintain them and vegetatively propogate them by stem cuttings and layering. Propogation from spores is particularly difficult because of contamination of the spores and therefore not recommended. Despite the obvious difficulties one felt that here was a challenge presented by these plants for the really keen, determined pteridologist with the patience — and the time (?) — to take it up. They have a potential for interest and success which deserves to be explored.

Jennifer Ide

THE J W DYCE BIRTHDAY CELEBRATION — 25 MAY

A R Busby

After the excellent afternoon's talk on Selaginellas and tour of the greenhouses, the meeting retired to the Wood Museum where a sherry reception had been organised as a prelude to the evening celebration. By this time, some 74 members and guests had assembled to toast Jimmy's health and happiness.

A superb cake sporting fern croziers in green icing on a white icing background was ceremoniously carried into the room; several gifts were presented and letters of congratulations read, including an enormous greetings card signed by the Society's vice-presidents and by many of those present at the reception.

Jimmy, obviously touched by this sincere show of appreciation and affection, expressed his thanks to his many friends both present and absent.

Sadly, many of those at this reception were not able to stay on for the evening meal but were pleased that they had been able to express their good wishes to Jimmy.

Later, at 7.30 pm, 54 members and friends assembled at Kew Gardens restaurant for Jimmy's celebration meal, and in a summer noted for its gloom and bad-tempered storms, we were able to enjoy one of the very few still, balmy summer evenings of the year.

The toast to Jimmy's health was proposed by Reg Kaye and Jimmy's reply incorporated many reminiscences of his 50 years' membership of this Society and the many friends he has made. Indeed, it is largely due to Jimmy's enthusiasm and hard work that this Society managed to get off the ground in the immediate post-war years.

Thanks are due to Mr & Mrs John Woodhams, Dr Mary Gibby, A C Jermy, Kathryn Kavanagh, M H Rickard, The Director of Kew, his staff and many others who helped to organise Jimmy's 80th birthday celebrations, but most of all to Jimmy for his unstinting efforts on behalf of our Society.

The happy gathering at Jimmy Dyce's Sherry Reception in May
(*photo:* M Ladell)

Bridgemere and Hodnut, Staffs — 14 July. Twenty three members and guests assembled in the car park of Bridgemere Nurseries near Woore in Staffordshire to try and discover any possible bargains that this very large garden centre may have to offer.

It was decided not to form a crocodile behind the day's leader, Dr Nick Hards, but to let the members wander around on their own and that we could assemble in the coffee lounge an hour later to discuss what we had found. Needless to say the bulk of members immediately made for the hardy fern section and although the selection on offer was poor, several members selected one or two plants to take home.

Martin Rickard discovered some real bargains in a corner of the nurseries where plants marked as 'lost labels' were on offer at reduced prices. After sampling what was on offer outside, we moved to the indoor pot plant displays where the usual Nephrolepis, Platyceriums, Aspleniums and Selaginellas were attractively arranged.

Feeling well pleased with the morning's acquisitions, we made our way to Hodnut Hall, some 10kl south-west of Market Drayton where, after a picnic lunch in the car park, Nick led the meeting around the attractive gardens.

We noted many plantings of hardy ferns including magnificent stands of the Royal fern, *Osmunda regalis* and its *cristate* form. Other notable ferns seen were *Polystichum setiferum 'Plumosum Bevis'*, many *Asplenium scolopendrium 'Crispum'*, several varieties of *Athyrium filix-femina* and the usual species of *Dryopteris*.

Sadly, many of the very old plantings of hardy fern varieties scattered around the gardens have now died out but it was encouraging to see many recent plantings of both British and hardy foreign ferns that will add to the attractions of this garden in the future.

A R Busby

Fairwarp — 14 September 1985. 14 members and guests met with a dozen members of the Sussex Botanical Recording Society at Fairwarp Church, on the edge of Ashdown Forest, on a windy, but not too wet, Saturday morning.

Rockswood/Furnace Wood, S.E. of Fairwarp was visited first. The wood is partially planted with conifers by the Forestry Commission but also consists of mixed deciduous wood, including numbers of hornbeam. An iron-rich stream runs through the wood, approximately North-South and at the lower end of Furnace Wood (Rockswood), Tunbridge Wells sandstone outcrops on the valley slope, principally on the East side, facing West.

Pteridium aquilinum was of course, abundant, as was *Dryopteris filix-mas* with *D. affinis* subsp. *borreri* along the stream banks. Some luxuriant specimens with *D. affinis* character, but large almost overlapping toothed pinnules may have been var. *robusta* or even *D. x tavelli* and warrant further study. *D. dilatata*, and *D. carthusiana* were locally common, as was *Blechnum spicant*, especially near the river.

Polypodium vulgare was common, especially on rock outcrops, and some fine specimens were seen on a ditch bank near Fairwarp. A small plant of *Dryopteris aemula* was seen on rocks near a small waterfall on the West bank of the valley, but was seen in greater abundance on the East bank, growing with *D. dilatata.* Also on the East bank, near the northern end of the sandstone outcrops, *Hymenophyllum tunbridgense* was seen, flourishing in a beautiful site under partial coniferous cover. On a previous visit, Equisetum fluviatile was found (at great personal cost).

In the afternoon, an exposed, recently burnt section of Ashdown Forest, close to the Sussex University Field Study Centre at Chelwood Gate, was visited briefly, specifically to see *Lycopodiella inundata* growing on damp peat, and a well-established single specimen of *Osmunda regalis.* Some difficulty was encountered during the short journey after lunch and time for fern hunting was limited. *Oreopteris limbosperma* was found on a stream bank however, and ferns found in the morning were present in wooded area in the afternoon, the exceptions being *Hymenophyllum* sp. *Dryopteris aemula* and *D. carthusiana* (the latter almost certainly being present if looked for).

We were extremely grateful to Dr. Francis Rose for leading the group to some superb habitats, and to David Streeter who had carried out some local liaison. We were most impressed by the wide botanical knowledge of the SBRS members. Bearing in mind the limitations imposed by travelling in a large group, we gained much from their expertise and hopefully were able to impart some of our knowledge in return. Meetings with other botanical societies such as the SBRS must be of great value, not least because of their extensive knowledge of local habitats and companion flora and we hope that such contacts can be maintained and extended in the future.

Pat Acock and Paul Ripley

THE AMERICAN FERN SOCIETY INC

wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the "Fiddlehead Forum" six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to "Fiddlehead Forum", the scientific quarterly "American Fern Journal". Membership costs $5.00 and $8.00 per annum, respectively. For particulars please write to Dr David S Barrington, Dept of Botany, University of Vermont, Burlington VT 05401, USA. Prospective members residing in Great Britain should write to Dr B A Thomas, Dept of Botany, National Museum of Wales, Cathays Park, Cardiff CF1 3NP. British members should note that the American Fern Society has to add a postage surcharge for overseas members. Membership will cost $7.00 and $12.00 respectively.

REGIONAL MEETINGS 1985

WEST MIDLANDS

Matt Busby

'Welcome to Spring' Flower Show — 20-21 August. The Solihull Horticultural Society once again kindly allowed space for local members to display literature and plants to advertise the Society's activities.

It aroused a fair amount of interest and many questions were forthcoming concerning the growing of obtaining of ferns and in particular, the cultivation of maidenhair ferns.

Several local members called in to say hello and support our local efforts to get new members, but although we did not attract any new members, anything that advertises our Society and its interests at grass roots level, must be worthwhile.

Thanks are due to Ray Smith who once again spent many hours manning the stand and to the local members who called in.

Mill House Garden, Mill Street, Warwick — 11 August. 16 members and guests received a very wild welcome from the weather for the visit to Mr A B Measures' garden in Warwick. Fortunately, the mornings' rain gave way to a very windy but sunny afternoon so that we could enjoy this delightful garden which stands close-by the River Avon, at the foot of Warwick Castle Guy's Tower.

Space prevents me from listing all the garden's treasures of trees, shrubs and herbaceous plants and although it is not considered as a 'fern garden', Mr Measures has found space for several varieties of the soft shield fern (*Polystichum setiferum*). Several other ferns were found including *Matteuccia struthiopteris, Adiantum pedatum* and *Blechnum penna-marina* also enjoyed the many shady corners of this enchanting garden.

It is difficult to find adjectives suitable to describe the glories of this garden or its delightful and unique setting. I can only urge members who visit Warwick to allow time to visit Mr Measures' garden, I am confident they will find it time well spent.

The garden is open every Sunday and Bank Holiday afternoon from Easter to October.

In the ten years 1974-1984, this garden has raised £14.711 for local and national charities.

Afterwards, the meeting moved to the greenhouses and demonstration garden at the University of Warwick's Dept of Science Education (by kind permission of Dr D Jeffray BSc, PhD) where the meeting ended with refreshments and a tour of the garden.

Matt and Margaret's Illustrated Wine and Cheese Party — 18 October — 20 members assembled in the Senior Common Room of the University of Warwick's Westwood Campus for the annual Autumn get-together. A large number of slides were shown on a wide variety of subjects. Alan Willmot began the evening with slides of the arrid habitats he found while on holiday in Spain. In spite of the very dry conditions, he was able to show several slides of Pteridophytes including *Adiantum capillus-veneris* and *Equisetum ramosissimum*.

Matt Busby displayed several slides taken during the Bishops Castle meeting this year and John and Margaret Collins showed the slides they took during the North Wales meeting last year. Ray Smith showed slides from his trip to the Shetlands including several of the local forms of *Asplenium adiantum-nigrum,* a group in which he has become very interested.

Alan Ogden showed a wide variety of slides which included some from this year's regional meeting at Warwick and concluded with some charming studies of his daughter, Beverley's, wedding during the summer.

Dorothy Parry showed slides of the fascinating flora she found on a visit to the Burren in the Republic of Ireland and Clive Brotherton ended the meeting with slides of various species and varieties of maidenhair ferns he has raised from spores. In addition, Clive exhibited many potted *Cheilanthes* and *Adiantums* he had raised from spores.

SOUTH EAST

Paul Ripley

On Saturday, 26 January, 22 members attended a meeting organised by Dr Barry Thomas at the Dept of Life Sciences of the University of London's Goldsmiths College.

Under Barry's guidance and with the very able assistance of his research colleagues Clifford Gray and Nat Quansah, we were able to view, in most cases for the first time, the sexual reproduction phases of ferns and horsetails under the microscope.

Most of us were actually able to see the Antherozoids being liberated from the male antheridia and later swimming and cloistering round the archegonia. Barry had also prepared demonstrations of the reproductive features of ferns allies and fossil ferns and we were also able to view some spores under the scanning electron microscope.

A fascinating afternoon, aided by the College's excellent facilities and Diana Thomas's welcome refreshments. Many thanks to all concerned for giving us such a super day.

SOUTH WEST REGION

Mary Potts

The first meeting of the season was led by Dougal Swinscow and took place on the eleventh of August, on a Sunday which promised to be the wettest of this wet summer then miraculously changed to fair weather at mid-morning. Eleven members and friends met at Noel Tanowin's house at Hennock for home-made blackcurrant juice, coffee and biscuits, while we waited for the clouds to clear. Noel led us to a wood situated on the slopes of Great Haldon and showed us a good stand of *Ophioglossum sp.* growing under Ash trees along with various species of *Dryopteris.* We also explored a nearby stream, passing through a deep ravine, which accommodated ten species including *Blechnum spicant* and *Polystichum setiferum.*

After a picnic lunch we visited Netton Cleeve Wood and took the path to High Rock to look for *Asplenium septentrionale,* last recorded in 1938. The rocks were enormous rounded boulders much overgrown with *Luzula sylvatica* and overhung by Oak trees; far too shady and damp to be a typical 'Forked Spleenwort' habitat. We did see some luminous moss, *Schistostega osmundaciae,* glowing like an alien body in a crevice under a large rock and admired some of the many fine *Dryopteris* of the *affinis* section (some of them possibly *D. x tavellii*) growing in the wood. On returning to the cars we were rejoined by Martin Rickard who, on a separate foray of his own, had discovered *Hymenophyllum tunbridgense* growing further up the valley, a new record for this area.

Dougal invited the party to tea at Topsham and we were able to see his superb selection of ferns for a second year. A fine plant of *Athyrium filix-femina 'Clarissima'* was much admired, also some good forms of *Polystichum setiferum.* A royal fern growing in a tub positively glowed in the diffuse light under a pergola; a brief tour of Dougal's philosophical garden epigrams completed a delightful day.

The second meeting of the summer was held at Chudleigh in Devon on September 5th and was led by Kenneth Adlam. A party of twelve members and friends met at Chudleigh Rocks after some of us inspected 'The Rock' nurseries during the morning. (The nurseries were selling some good forms of *Asplenium scolopendrium 'Crispum'* amongst others, though all imported and un-named). Chudleigh Rocks form an enormous limestone outcrop overlooking the surrounding countryside and are an obvious invitation to the climbing fraternity. The dominant fern was *Polypodium australe,* growing in large clumps on any ledge or fissure where it could sustain life. We observed some slight variation in frond shape, some of the fronds showing incised lower pinnules typical of *P. australe. A scolopendrium* was also in evidence growing on the rocks and in the surrounding woodland.

We returned to Kenneth's house for Tea and the party spent an interesting time looking at Kenneth's garden in some welcome late afternoon sunshine. The Adlams have been living at their present address for two years, during which Kenneth has transformed the garden into a spectacle of delight and a place of absorbing interest. New borders, fences and rock garden have provided homes for a catholic diversity of plants. Their fern collection has survived the move to flourish handsomely in the damper soil and milder climate of South Devon. The *Osmundas* were growing well next to a convenient ditch and various other fern borders were filled with large and flourishing specimens. Kenneth is to be commended on his handiwork over the last two years and Dolsheen thanked for her hospitality reminiscent of Lakeland days.

The last meeting of the year took place at Porlock Weir on September 29th and was led by Joan Loraine. We found ourselves the only members present, probably due to the meeting being held so late in the year. The morning was spent exploring the woodland surrounding the cliff walk to Culbone, just above Porlock Weir. These woods are full of *Polystichum setiferum,* tier upon tier of fine large plants growing up amongst the trees. We were saddened to see that someone had seen fit, in the cause of maintenance, to cut back all the plants adjacent to the path. The ground, for some yards on either side of the path was strewn with dead fronds.

After a picnic lunch Joan Loraine took us to a superb site at Porlock Ford, where an acre of *Dryopteris aemula* was flourishing. This fern is easily distinguished en masse by its habit of growth, low-stature and verdant colour. The piece of woodland at this site consisted of ancient *Oak* trees and some Holly and though the fern was holding its own, Joan feared that it could be finally overgrown by seedling hollies. We then visited a coombe slightly to the south of the *D. aemula* which site was covered with *Polystichum setiferum* and *Asplenium scolopendrium* which no sign of D. aemula or any other calcifuge plants — a very clear indication of the change in lime content of the soil.

We then travelled up the toll road, behind Porlock, the valley of which was full of shield ferns and Hartstongue again, many hundreds of large plants growing up the sides of the steep banks. We then travelled by car along a track through the top of the wood, arriving back at Porlock Ford at the end of the afternoon. We returned to Joan's house for a slice of cake and cup of tea and a quick, unadvertised trip round her garden.

I should like to thank those who have led meetings this year and offered such excellent hospitality; also all those members and friends who have supported us. We are always pleased to welcome members and friends to our informal friendly meetings.

LEEDS & DISTRICT

Jack Bouckley

Our season started off quite early in the year on Saturday 30th March when eight of our members met at the home of Jack Bouckley for a talk about fern propogation from spores. Most of those present took home a few packets of various types of spores so that they could all have a go. Reports which have come in about the project point to the fact that the majority of the spores have produced prothalli, so we are all hoping that everyone will eventually have some ferns to reward them for their labours. The meeting finished with a walk around Jack's garden and then refreshments which were laid on by Ruth Bouckley.

On Wednesday, the 12th June we visited Harlow Car Gardens for an evening's stroll to see how the recent fern plantings were going on. It is hoped that eventually, when the NCCPG authorise it, national collections of Polypodiums and Dryopteris will be planted there where people will be able to see them every year. Later in the evening we found our way back to the members' room for the usual cup of tea which was laid on by Eleanor Fisher and we sold a few plants towards group funds.

It was on Saturday, 13th July that sixteen of us met for a Field Study at Hutton Roof under the expert guidance of Dr. Kevan Chambers of Manchester. The weather was very kind to us as we started off on what was to be quite an energetic day. Hutton Roof is quite a large area of limestone pavement west of Kirkby Lonsdale in Cumbria and as the previous night had been one of continuous rain, care had to be taken as the surface of the limestone was very slippery.

Apart from the usual bracken, our first fern sighting was *Phegopteris robertiana* followed shortly afterwards by *Phyllitis scolopendrium.* As we got further into the part of the pavement where the grykes are deeper and wider the scollies became more numerous and they were growing side by side with *Polystichum aculeatum* and *Asplenium viride.* What a lovely fern is *P. aculeatum* as it nestles well down in the grykes, untouched by hand or by animal. About lunch time a mist blew over and it looked rather as though things were going to be spoiled but after sitting down and eating our sandwiches, etc. the sun was shining again. During the afternoon we saw *Dryopteris affinis, D. filix mas, D. dilatata, D. villarii, Athyrium filix-femina and Asplenium viride.* There were also quite a number of wild flowers including *Listera Ovates* which all drew a lot of attention as they were pointed out by Kevan. Towards the end of the afternoon and only about half a mile from our cars the heavens opened and we were all pretty well soaked before we had a chance to get our waterproofs on. This was not helped by the fact that we were battling our way through shoulder-high bracken.

Back at the cars, still in the torrential rain, one of the party, Les Dugdale, opened his car boot to reveal a compartment full of ferns for distribution among those who were interested. We do thank Les very much for his generosity.

We also thank Kevan for leading us over this difficult terrain and for passing on his knowledge of the fern population and also of all of the other wild flora.

The meeting broke up with some going home and others going over to Reg Kaye's nursery at Silverdale, but unfortunately Reg was away in the Dolomites. One bonus for those who stopped in the Hutton Roof village was a length of wall where we were able to see *Asplenium trichomanes, A. ruta-muraria, Ceterach officinarum* and *Polypodium vulgare.*

The evening of the 14th August threatened to be very wet for our search for ferns around The Hollies Park in Leeds when Gordon Cooper was our host, but luckily, after about a week of continuous rain, the weather changed for the better about half an hour before we met. This park is quite a wild sort of area which is owned by Leeds Corporation and a lot of fern planting has been done by Gordon among the existing wild fern life — and very effective it is. Our leader showed us around the Dell area, then the park nursery and lastly around his own personal collection of ferns where we saw plants which none of us had seen before. Most of the nine who were present were given a fern by Gordon and we thank him very much for these and also for making the evening such a pleasant one.

The ferns seen were: *Dryopteris dilatata, D. dilatata 'Crispum cristata', Osmunda regalis, Athyrium filix-femina, Polystichum setiferum, Osmunda claytonia, O. Cinnamomea, Onoclea sensibilis, Matteuccia struthiopteris, Phyllitis scolopendrium* 'Crispa', *Cystopteris dickeana, Blechnum penna marina, B. spicant* and *Phegopteris dryopteris.*

On Saturday, 7th September, we were back at Harlow Car Gardens for a talk by Dr Anne Sleep of Leeds University. Thirteen members turned up and two visitors to the Gardens walked in towards the end to hear Anne give an extremely interesting and instructive talk on 'Fern Identification'. It really was a delight to listen to her as she started right at the beginning and step by step led us through following a hand out which she had so expertly arranged. In the handout was a Key to the identification of British ferns. Anne had also brought along four microscopes, numerous fronds, a host of herbarium specimens and lots of pot plants including a marvellous plant of *Polystichum x bicknellii (P. aculeatum x P. setiferum).* After the lecture, Anne spent about another hour and a half just chatting and answering questions. Anne Stark and Elizabeth Weaver proved to us that they are experts at making and serving tea. Plants were again sold for group funds.

We are all very grateful to Dr Anne Sleep for all of the work she had put in and also for giving us her time and attention. We also thank Leeds University for kindly lending us the microscopes.

What a relief it was on the morning of Saturday, 14th September, to find that the forecast heavy rain and gales had actually been replaced by light showers and wind as ten adults and three children had gathered at Midgehole Car Park to go on a fern search upstream towards Hardcastle Crags near Hebden Bridge. Included in the party was Mr Frank Margatroyde — the President of Halifax Scientific Society — who was to be our leader for the day. We do thank Margaret Rothwell for introducing us to this very knowledgeable man.

We realised within minutes of arriving at the car park that we were going to have a first class field day as in the stone walls around this area were *Cystopteris fragilis, Phyllitis scolopendrium, Asplenium trichomanes* and growing in the warden's garden on the other side of the road was *Osmunda Regalis* and then about a hundred yards away, growing in a wall was a Polypodium with its bottom or lowermost pinnae on every frond angled forward so that they were only about 30° angle between them which seems to point to there being P. australe. After passing some *Pteridium aquilinum* and Dryopteris filix-mas we came across *Oreopteris limbosperma* followed by D. dilatata. Frank pointed out various plants which we are pretty certain are Dryopteris hybrids. One of these is pretty certainly *D. x tavelii.* Close to this was *D. affinis.* There are many very good stands of *Equisetum sylvaticum* dotted about throughout the area together with *Blechnum spicant* growing to about 2'6" for the barren fronds and a few inches more for the upright fertile fronds. Continuing further upstream we came across *Dryopteris carthusiana* and some *Athyrium filix-femina* incuding a very attractive red stemmed one.

There were ferns everywhere and Frank seemed to know almost every one of them, but we arrived at an old unused mill where some thoughtful person in the not too distant past had erected some seats, so it was decided that this was the place for lunch. What a lovely place this was with a large number of dragon flies flitting around. One of them actually settled on the arm of one of our party which was almost certainly an *Aeshna grandis,* no doubt attracted to that site by the mill pond with its still clear water.

Lunchtime passed all too quickly. Off we were again and within twenty five yards of where we had been sitting Frank led us to a very old stone bridge across the river. Many plants of *Asplenium ruta-muraria* were growing among the stone work. Leaving these behind we walked for about half a mile without seeing anything fresh — then growing up the cliff side of this remarkable valley we saw a few plants of *Polystichum aculeatum.*

We now left the bottom of the valley and climbed up the steep side of the vale to an old track where we started on our homeward trip. Our leader suddenly turned off the track and continued upwards to a large outcrop of rock where, among many interesting plants were some more *Asplenium trichomanes,* some in crevices and some at the base of the rock. We worked back to the track again and on the way down, almost hidden from the road, was a small stand of *Phyllitis scolopendrium.* Then Frank told us that he was going to lead us to see a stand of the Beech fern which was on our way back to our cars. This turned out to be across the river again and right up to the top of the other side, but what is a couple of hundred feet to keen pteridologists? On both sides of the footpath were plants of very luxuriant *Phegopteris connectilis.* What a lovely end to a very profitable day. We do thank Frank Murgatroyd for all of the preparation he had put in to organising the day for us.

This ended our organised 1985 programme so I would like to take this opportunity to thank everyone who has taken any part at all during the year thereby making it a very successful second season. I know that I am looking forward to 1986. Particular thanks to Major Richard Unett for all he has done on the administration side.

Jack Bouckley

NATIONAL FIELD MEETINGS 1985

BISHOPS CASTLE — 5-7 JULY. On one of last summer's drier weekends Martin Rickard and Matt Busby guided a small but enthusiastic party around Shropshire. Many people were staying at the Castle Hotel in Bishops Castle and it was in the bar there that we met on the first evening. The most important business conducted then, however, was choosing the menu for the following night's dinner.

On Saturday morning, 20 of us set off for Corndon Hill (32/305968), a very attractive and open hillside north of Bishops Castle. Eyes turned upwards to see a tawny owl fly over clutching its prey, but very soon we were eagerly scanning streamside banks and rock crevices. Early finds were both red and green-stiped *Athyrium filix-femina, Dryopteris affinis, Oreopteris limbosperma,* and *Pteridium aquilinum.* Higher up, colonising the scree, was the parsley fern, *Cryptogramma crispa,* and between larger rocks and boulders were plants of *Dryopteris dilatata* and *Gymnocarpium dryopteris. Blechnum spicant, Dryopteris filix-mas,* and *Polypodium vulgare* were also seen, as well as more *Dryopteris affinis.* Inevitably there was discussion about the identification of *D. affinis* at subspecies level. We felt that there were certainly two different subspecies present on Corndon but were wary of committing ourselves to names. As we climbed still higher an area of *Viola lutea* (Mountain Pansy) was a pleasant distraction. So also was the glorious view of the Stiperstones and the panorama towards the Malverns in the south and Wales in the west.

At the end of the morning we straggled back to our cars, off for lunch to a nearby pub. During the afternoon we visited a valley above Priestweston (32/302972), walking along the hills either side. Specimens of *Athyrium filix-femina, Dryopteris affinis, D. dilatata, D. filix-mas, Gymnocarpium dryopteris, Oreopteris limbosperma, Polypodium vulgare,* and *Pteridium aquilinum* were again found. New species for the day were *Asplenium adiantum-nigrum* and *Dryopteris oreades* found beneath crags on the hillsides, and *Equisetum arvense* on the valley floor. An old mineshaft lower down the valley was filled with a lush growth of *Asplenium scolopendrium* and *A. trichomanes,* an unexpected bonus. *Polypodium interjectum* was found growing near the edge of the shaft.

We thought we had had a good day but the afternoon was still far from over. Our convoy moved on to the garden of Mrs Denise Hatchard at Maenllwyd Isaf near Abermule, one of the gardens open to the public under the National Garden Scheme. We wandered around its twisting narrow paths admiring many varieties of ferns planted amongst flowers and talking about them with Mrs Hatchard herself. It was a very pleasant, relaxing end to the afternoon and we would all like to express our appreciation to Mrs Hatchard for allowing us this 'private view'. Other members may like to visit the garden when it is next open to the public.

Whilst most of drove home to get ready for dinner, the enthusiastic Margo Ladell and Anthony Pigott went to yet another site near Dingle Bridge (32/273965) where Margo found *Polystichum setiferum.* The day ended with a lively dinner at the Castle Hotel, discussing the day's finds and tucking into an interesting menu.

On Sunday morning we were joined by Jack Bouckley for our visit to Cwm Wood (32/335795) and Rock of Woolbury (32/314796), to the south of Clun. The former yielded *Athyrium filix-femina, Blechnum spicant,* two subspecies of *Dryopteris affinis, D. dilatata, D. filix-mas,* a few candidates for *D. x tavelii, Oreopteris limbosperma* and *Pteridium aquilinum.* For the few who braved the brambles and ventured as far as the stream there was the reward of *Asplenium trichomanes, Cystopteris fragilis,* and *Gymnocarpium dryopteris.* Soon it was time to press on to Rock of Woolbury. As we entered the old quarry we saw large quantities of Rock Stonecrop, *Sedum forsteranum,* a local speciality, carpeting rock and ground alike, its yellow flowers brightly contrasting with red leaves and stems. On the quarry faces we saw *Asplenium adiantum-nigrum, A. trichomanes* and *Polypodium interjectum,* while on the floor and grass-covered slopes were *Athyrium filix-femina, Dryopteris dilatata, D. x tavelii*(?), and a few plants of *Polystichum setiferum*. The time passed all too quickly and soon we were speeding off to Wigmore for lunch before visiting Martin's garden at Leinthall Starkes. Here everyone roamed around getting ideas for their own garden and making admiring noises at the range and quality of Martin's collection. People were enticed into the kitchen for tea and homemade cake — thank you very much, Hazel — before going back into the garden for another look. When I left there were still people there — selecting plants to take home with them!

It was an extremely enjoyable weekend and we all thank Matt and Martin for their hard work and enthusiasm before and during the meeting.

Kathryn Kavanagh

LAMBERHURST, KENT — 19-21 JULY. On an extremely showery Saturday morning, 11 members met at Friar's Gate, on the Eastern edge of Ashdown Forest and followed the wooded course of a stream. *Blechnum spicant, Athyrium filix-femina, Dryopteris dilatata, Dryopteris filix-mas, Dryopteris carthusiana* and *Dryopteris affinis subsp. borreri* were abundant here, with occasional mature plants of *Oreopteris limbosperma*. Not far from the source of the stream, the remains of a dam and various watercourses (possibly associated with old iron workings although the stream was not as iron-rich as some in this area) yielded enough lime for some very fine specimens of *Polystichum setiferum* and *Asplenium scolopendrium*. The latter were particularly luxuriant with unusually broad fronds, and Peter Clare found a semi-lacerate variety. On some extraordinary stone steps, which together with the thunder rolling around reminded one of a set for a Wagner opera, *Polystichum aculeatum* was growing, with *Asplenium adiantium-nigrum* on a wall at the top. In addition to *Equisetum arvense, E. fluviatile* occurs here, but was not found at this meeting. *Pteridium aquilinum* consistutes the dominant flora over much of Ashdown Forest.

In the somewhat less wet afternoon, a circular walk based on a disused railway at Balls Green yielded some fine *Asplenium trichomanes* on bridges over the Medway. *Polypodium vulgare* and *Equisetum fluviatile* were found in addition to *Athyrium filix-femina, Dryopteris dilatata, D. filix-mas, D. affinis* and *Pteridium aquilinum*. At the end of the afternoon came the 'piece de resistance', Pat's discovery of *Cystopteris fragilis* growing in superabundance the full length of the platform wall of the former Balls Green Station. *Asplenium ruta-muraria* is common also on the wall but quite overshadowed by the remarkably flourishing *Cystopteris*.

On Sunday, two privately owned woods were visited by kind courtesy of their owners, Mr Teal (Brown's Wood) and Mr Miles (Sunninglye Farm). Both these woods lie between Bells Yew Green and Lamberhurst.

In Brown's Wood, *Athyrium filix-femina* and *Oreopteris limbosperma* were found in abundance, together with *Pteridium aquilinum, Dryopteris dilatata, Dryopteris carthusiana, Dryopteris filix-mas, Dryopteris affinis* subsp. *borreri* and *Blechnum spicant*. Two very fine colonies of *Dryopteris x deweveri* were found. They were very clearly intermediate between the 2 parents but easily exceeded those in the surrounding area both in height and vigour. In the wood below Sunninglye Farm, which is slightly more shaded than Brown's Wood, *Oreopteris limbosperma* was not found but *Dryopteris aemula* was seen in two places. *Dryopteris affinis* was particularly abundant in this wood. A Polypody was found on a bank between the two woods, but its species (? *interjectum*) was not determined.

After lunch at Frant, a detour was made to see *Polystichum aculeatum* growing very well in a bank by the main road at Frant Hill. Steven Munyard provided the information that the site is precisely the one mentioned for the species in Jenner's flora of 120 years ago! The *Hymenophyllum* site in Rock's Wood was visited next and we were disappointed to find that the colony was very drastically reduced in size from a visit made only a few weeks previously. The impressive bank of *D. aemula* was happily looking as flourishing and beautiful as ever.

Tea kindly provided by Linda (Ripley) rounded off an enjoyable weekend, but we were disappointed not to have met more members from outside the South-Eastern area.

P. Acock and P. Ripley

CASTLE HOWARD, 17 & 18 AUGUST. Ten members met Jim Russell at Castle Howard Garden Centre, North Yorkshire, on quite a fine morning, for a tour and fern search around Rays Wood and the Arboretum which are situated within the boundaries of the Castle Howard Estate — the location of the television programme "Brideshead Revisited". It is an Estate dating back to the 14th century with many remarkable trees and plants plus thousands of ferns of many different species and varieties.

The Severall's Wood area in the arboretum has only been planted for about six years and already there are signs of fern growth, and it would be very interesting to go back to that area in about nine or ten years to see how both the trees and the ferns have established themselves.

The following ferns were found: *Osmunda regalis, Polystichum setiferum 'Pulcheriumum Bevis', Dryopteris filix-mas 'Lineare', Polypodium vulgare Gymnocarpium dryopteris, Dryopteris filix-mas 'Crispa cristata', Dryopteris dilatata, Athyrium filix-femina 'Victoriae', Blechnum penna marina, Polystichum munitum, Adiantum pedatum 'Aleuticum', Matteuccia struthiopteris, Onoclea sensibilis, Dicksonia* *Adiantum pedatum 'Aleuticum' Matteuccia struthiopteris, Onoclea sensibilis, Dicksonia* *antartica, Dryopteris filix-mas* ramose form, *Polypodium vulgare 'Cornubiense'* and *Polystichum setiferum.* It is very interesting to note that last year, when I visited this area with Jim, he pointed out how the *Polypodium vulgare 'Cornubiense'* had been almost reduced to compost by the peasants but luckily this year, the whole stand is flourishing and it is certainly an impressive sight. Last year had been a period of drought, this year just the opposite.

As we were getting towards the end of our walk through Rays Wood, Jim lifted up the foliage of a plant to reveal to our surprise a *Woodwardia japonica.* There were many other varieties which we were unable to identify in the field. Perhaps some of the Society's experts in various species could at some time help to put correct names to some of them.

We were all very impressed by the extensive use of many of the types of Bamboo which have been planted in just the right positions to act as windbreaks. They are certainly very versatile plants.

At the end of the Ray Wood search Jim Russell asked us all round to his house where he supplied us with a lunch which he modestly called "a sort of picnic". This was complete with all the trimmings with plenty of liquid refreshments of various sorts to quench our thirsts. We all thank Jim, his sister and his secretary for making this such a pleasant occasion.

The hour immediately after lunch was spent looking round Jim's massive greenhouse where he has a large collection of the more tender ferns including a collection which he brought back from Mexico earlier this year.

Sunday was misty with a light drizzle when eight of us met at Askham Bog, just south of York, where we had to battle with six foot tall undergrowth, mainly nettles and Impatiens, but being pteridologists, we battled on and were rewarded by seeing a couple of very large *Osmunda regalis* and one small one growing in the company of *Dryopteris carthusiana, D. dilatata* and *D. filix mas.* Then Jim found the fern we had all hoped to see: the *Thelypteris thelypteroides* subsp. *gl;abra,* or is it *Thelypteris palustris* or shall we just settle for the Marsh fern, but it is hoped that the march of the unrelentless nettles will not overcome this stand of a fairly rare species.

Sunday afternoon, some of the party went home, some went back to Castle Howard to look round the house and gardens and I went back to an untouched part of Severalls Wood to look for *Ophioglossum vulgatum* which I feel must grow there, but I was unlucky.

Most of the party left names of ferns they would like and I know that Jim will be sending their requests.

Once again, many thanks to Jim Russell, his sister and his staff and to those who travelled from London, Manchester, Hartlepool and Yorkshire for making it such a pleasant and instructive weekend.

J Bouckley

ARGYLL — 23/27 AUGUST

This meeting, the first national one to be held in Scotland for some time, had *Dryopteris* as its main theme. We had our base at the Cairnbaan Hotel, about two miles west of Lochgilphead, on the Crinan Canal.

We were fortunate enough to be led by Hugh Corley who knows the area very well, through regular visits, and knows *Dryopteris* in this country as well as anyone. Additional expertise came in the form of Clive Jermy and the presence, at least in spirit, of Christopher Fraser-Jenkins, who had supplied us with his very latest diagnostic details of *D. affinis.* There is a high density of *Dryopteris* in Argyll, both in terms of individuals and of taxa, and so we had plenty of opportunity to study some of the subtle and problematic aspects of this genus. *D. affinis* is still a somewhat controversial subject, taxonomically, and so I feel that I ought to give the following disclaimer! The recording here of *D. affinis* subspecies is based on determinations by the author, using the current descriptions of Christopher Fraser-Jenkins. Other people may (and often did!) have other ideas. *Pteridium aquilinum* was seen almost everywhere and is not recorded at individual sites.

On Saturday morning, we began the meeting by going to the north-east end of Loch Coille Bharr (NGR 16/788905). After leaving the cars at the road-side, we slowly made our way along the track that runs down close to the loch and then follows the line of the shore on the south-east side. *Dryopteris filix-mas, D. dilatata, D. affinis* subsp. *borreri* and *Athyrium filix-femina* were plentiful along the track and on the steep rocky slope to the south-east, where they were joined by the occasional *D. aemula, D. expansa* and *Phegopteris connectilis.* One large plant of *D. affinis,* with rounded, blunt-toothed pinnules, the lowest ones overlapping the rachis, was tentatively identified as subsp. *stilluppensis;* there were probably others, though most of the *D. affinis* seemed to be clearly subsp. *borreri.* In the damp woodland between the track and the loch, there was an abundance of *D. dilatata* and *D. carthusiana.* About half way along the loch there is a small lochan known as the Black Loch, presumably due to the colour of its water which overlies peat. Between the track and the lochan, we explored the marshy woodland, the floor of which was covered with extremely lush moss of several different species. There were large numbers of *D. dilatata, D. carthusiana* and *D. aemula,* along with a few *D. × deweveri;* one or two plants were carefully examined on suspicion of being *D. aemula* hybrids. *Equisetum fluviatile* was found growing in one end of the lochan. We found a little *E. arvense* back on the track but unfortunately we were to see very little *Equisetum* throughout the meeting. Moving further along, parallel with the shore of the loch, we came to a drier, more rocky part where *D. aemula* and *D. expansa* dominated, the *D. aemula* being particularly impressive, both in size and numbers. After finding our way effectively blocked by rocks and a conifer plantation, we returned to the cars to have lunch. On a wall by the road, *Polypodium vulgare* and *Asplenium trichomanes* were observed.

After lunch we moved the cars further down the road to where we could gain access to a forestry track; this enabled us to reach the south-west end of Loch Coille Bharr (NGR 16/780895). From there we were able to walk and scramble north-eastwards into the relatively open conifers. We saw all the *Dryopteris* species of the morning again, though rather more scattered in distribution. *Blechnum spicant* was added to the list and of particular interest was a small form of *D. expansa* with wide, rounded pinnules, once known informally as *D. dilatata* var. *'Kintyrensis'.* A single plant of *D. affinis* subsp. *stilluppensis* was found with very pale, almost white scales; this may have no taxonomic significance, but merely be due to genetic variation rather like the 'red stem' in *Athyrium filix-femina.* In several places, where up-rooted trees had left large bare patches of mud, there was a profusion of prothalli and young sporelings, in quantities rarely seen. A path was followed around to the shore, but nothing further of great interest was found.

Sunday morning found us at the woods near Old Poltalloch by the shore of Loch Craignish (NGR 17/805008). We had been fortunate enough to obtain permission from a local landowner to drive almost all the way to the woods, which avoided what would otherwise have been a very long walk. The track we drove down did, however, provide some interest, the soft mud and gravel being more suitable for Land Rovers and the like than for our own transport! We found *Equisetum sylvaticum* growing strongly between the track and the woods, and *Polypodium vulgare* on a nearby wall. The party spread out in the wood and drifted up the hill and down again during the course of the morning. We found *Dryopteris aemula, D. dilatata* and *D. expansa* in quantity, some of the *D. expansa,* especially on the steeper slopes, being very large plants. We found a very interesting stoloniferous form of *D. dilatata* which needs further investigation. There were two distinct populations of *D. affinis,* of about equal numbers but not obviously very different, except for a few large plants. The two types differed in that one was glossier and tougher, had more blunt points to the pinnules, was narrower at the base, had more ascending pinnae and had indusia splitting in the manner of subsp. *affinis.* These characteristics would make the two populations subsp. *stilluppensis* and subsp. *borreri,* but we might have expected the plants of subsp. *stilluppensis* to have had the lower pinnules on each pinna overlapping the rachis and not to have had splitting indusia. However, few of these diagnostic characters can be taken as always applying;

we were reminded throughout the meeting that there are many factors besides genetic difference that cause variation in the *D. filix-mas/affinis/oreades* group, such as age, size, exposure and moisture.

After lunch, we set off southwards to visit the site of *Dryopteris x sarvelae* in Kintyre. Although rather further from our centre at Cainbaan than the other visits, it seemed too good an opportunity to miss while we were so relatively close. We stopped briefly on the road between Lochgilphead and Tarbet to look at a spot on the steep rocky slopes that face Loch Fyne (NGR 16/858775). There we saw *D. dilatata, D. expansa,* and possible hybrids, *D. affinis* subsp. *stilluppensis,* and *Hymenophyllum tunbrigense.* The *D.a.* subsp. *stilluppensis,* in its exposed position by the road was characteristically crinkly, with pinnules twisted up almost at right-angles to the plane of the blade.

We continued on to our destination on the road to Carradale, just past the turning to Skipness (NGR 16/861554). The ground slopes gently towards the sea, carpeted with short grass under oak trees; a burn runs under the road, at right angles to it. The *Dryopteris × sarvelae* covers a large area, on both sides of the burn. As it has presumably spread by vegetative means, the colony must have existed for some considerable time. There appeared to be two types of frond present, one tall and upright, looking very intermediate between *D. carthusiana* and *D. expansa,* the other shorter with more rounded pinnules, not unlike the var. *'Kintyrensis'* of *D. expansa* that we had seen the day before. Some of us wondered whether what we saw was not pure *D. × sarvelae,* but a mixed population with a form of *D. expansa.* However, subsequent examination of some suspect fronds showed only abortive spores.

On the way back, we stopped briefly to look at a wooded slope, facing the sea above the road to Skipness (NGR 16/881565). There we found *Dryopteris filix-mas, D. dilatata, D. affinis* subsp. *borreri* and *Polystichum setiferum.*

Before leaving Cainbaan on Monday, we had a session looking at pressed fronds collected previously by Hugh Corley. These included many unusual fronds which could not easily be put into existing taxa. We were very much impressed with Hugh's eye for subtle differences which had enabled him to collect so many problematical ferns.

Our first visit on Monday was to Ardcastle Wood, which is to the north-east of Lochgilphead, by Loch Fyne (16/943919). We walked along forestry tracks until we came to our objective: a partial clearing in the otherwise quite dense conifer plantation, apparently caused when several adjacent trees had their tops broken off by wind. The result was an area ideal for the growth of woodland *Dryopteris!* There were large numbers of *D. dilatata, D. expansa, D. affinis,* and *Athyrium filix-femina,* many of them being very large specimens. Some *D. aemula* and *D. carthusiana* were also seen. Again both subsp. *stilluppensis* and subsp. *borreri* of *D. affinis* seemed to be present; some of the subsp. *borreri* had lower pinnules so lobed that they were almost pinnate themselves.

After returning through Lochgilphead, we headed north towards Loch Awe. A brief stop was made near the junction of the Oban road with the road to Loch Awe (NGR 17/842008), to look at a particularly large and crinkly *Dryopteris affinis* subsp. *stilluppensis.* There had, apparently, once been a small colony here, but now the spot was covered with tarmac for the road.

We travelled down the road towards Loch Awe, stopping again by a cattle grid just past the village of Ford (NGR 17/875036). There was a large plant here, having morphology consistent with *Dryopteris* × *mantoniae*, but apparently with good spores, which Hugh thought could be a derived hexaploid. A wall by the side of the road was found to be supporting *Polypodium vulgare*, *Asplenium adiantum-nigrum*, *A. trichomanes*, *Cystopteris fragilis* and *D. affinis* subsp. *borreri*.

Our final stop of the day was in Eredine Forest (NGR 17/995126). We drove up a forestry track to a point where the forest was relatively open and sloped down away from the road. Here we found *Blechnum spicant*, *Dryopteris carthusiana*, *D. dilatata* × *deweveri*, *D. expansa*, *D. affinis* subsp. *borreri* and *D.a.* subsp. *stilluppensis*. It was particularly interesting to note the way that the *D. carthusiana*, *D. dilatata*, and *D. expansa* each formed more or less pure stands in separate but adjoining areas even within the relatively small distance over which we searched.

Tuesday morning gave us torrential rain, the first time the weather was a serious problem during the meeting. We travelled to a point on the road from Kilmelford to Loch Avich (NGR 17/885118). A steep bank with thick grass contained *Dryopteris oreades*, the first place that we had seen it, extending thinly over some distance. It was an unusual situation for the species, but it seemed to be thriving, especially where it was protected by partially overhanging rocks or shrubs. We found abundant quantities of *Oreopteris limbosperma* and a little *D. affinis* subsp. *borreri* and *D.a.* subsp. *stilluppensis*. By lunchtime the continuing rain and the need for many to make long journeys home brought the meeting to an end. We had a most enjoyable meeting, visiting some fine sites in a fascinating part of the country.

Anthony Pigott

PTERIDOLOGY IN SCIENCE AND SOCIETY

(An extract from Clive Jermy's presidential address at the AGM of the Society, 16 February 1985.)

Amateur fern enthusiasts play an important role in the various aspects of research undertaken by professional pteridologists. In addition to using the information resulting from research, they frequently contribute valuable observations, records and refreshing new points of view. In the space available here, I will confine my remarks to one major aspect of our work — taxonomy.

Taxonomy is concerned with classification, which in our case, involves identifying, describing and naming ferns and their allies and also studying the relationships between genera, species or varieties, or even individuals within a natural population. Basically, the names we give plants serve as handles to facilitate communication about the plants. In the 18th and 19th centuries, Latin was the language used to communicate such scientific matters, and the binomial system of giving two Latin names, one for the genus and the other for the species, is well known. This system of nomenclature was established by Linnaeus in his *Species Plantarum* in 1753. Pteridophyte classifications (arrangements to show relationships) were published by early specialists such as Olaf Swartz (1806) and Karl Boriwog Presl (1836, 1845, 1847), and as people around the world added to this framework, it became necessary to standardise the names in use. Duplication of names was inevitable, and a method of choosing which should be used was required. Eventually, but unfortunately long after thousands of plants had been named, plant taxonomists drew up an *International Code of Botanical Nomenclature*. This code is constantly under review and amended in an attempt to stabilise nomenclature. One of the most important rules is that we use the earliest name given to a particular species or variety, and it is as new names are unearthed, that changes inevitably take place.

Theoretical aspects of nomenclature must be considered, but an equally important consideration is the communication of what constitutes a particular genus, species or variety. Written descriptions of new taxa can be ambiguous (these are still published in Latin so that the information is available to as many people as possible), so drawings or photographs of the plants are very helpful. It is often necessary to examine earlier described species as our knowledge of plants and techniques progresses. It is therefore essential that we retain specimens for future study, and this is precisely what we do in the herbarium.

The idea of pressing and drying plants to make herbarium specimens was developed in Pisa, at the first botanic garden to be established in Europe. From about 1543, the monk-in-charge, Luca Ghini, built up a collection for students studying medical botany. The earliest herbaria were put in portfolios, examples of which can be seen at the British Museum (Natural History) in the original collections of Sir Hans Sloane. Specimens are now put on individual sheets which can be used like a large card index. It is particularly important that the 'type' specimens (those originally described as new species) are housed in major herbaria to make them widely available.

Two areas of study which have expanded considerably in recent years, are those of chromosomes (cytology) and the chemicals which plants contain. Cytology is the study of chromosome behaviour, usually as observed in growing root tips and the early stages of developing spores. It also involves studying the components of chromosomes, both the material of inheritance (DNA) and the matrix surrounding it. During one of the stages of spore formation (meiosis), involving the division and recombination of chromosomes, the chromosome number is halved. Hybridity may be confirmed at this stage since chromosomes of most hybrids do not pair normally; information about the parentage of a hybrid may also be revealed. Our understanding of fern taxonomy has certainly been helped greatly by these studies, which were pioneered by Professor Irene Manton (see her own account published in the Fern Gazette, 1973 & 1974).

Since the 1950's scientists have developed techniques of chromatography to study the distribution of chemicals (e.g. flavonols and phloroglucinols) in ferns such as *Dryopteris* species. Such studies may reveal substances beneficial to man and there are indications that some tropical species contain chemicals which might be useful in the treatment of skin and eye diseases. Ferns have not hitherto been the source of any major drug, although many have been used in folk remedies throughout the world.

One considerable problem in taxonomy is how to decide which characters are important and which are not. A working knowledge of plants acquired over the years gives one a good idea as to which are the most constant and stable characters. Plant taxonomists examine and use, for the most part, the features they can see on herbarium specimens. However, some characters cannot be studied adequately, or even at all, in dried specimens, and this is where the grower and field-worker have the edge on the herbarium taxonomist.

So far I have been talking about methods used by professional botanists, but a herbarium of type or authentic specimens can be useful to anyone who needs to name plants. In the BPS, many of us are concerned with the naming of varieties. Some of the early growers made herbarium specimens of such varieties, although they were probably unaware of the importance of them. In some instances, authentic material is still grown, and it is important that we make a concerted effort to collect herbarium specimens from these, and, with existing pressed material, set up a base-line herbarium of varieties. As with species, so the same variety may be named several times. There is also a *Code of Nomenclature for Cultivated Plants,* which guides us in the selection of correct names for garden plants, including fern varieties. The essential items of the Code cannot be ignored by the BPS if we are to maintain our reputation as a world authority in the tradition of Lowe, Druery and Kaye. The salient points of the Code will be summarised in a future issue of the *Pteridologist.* One point of particular note is that it is no longer acceptable to use Latin names for cultivar (variety) names, however romantic they might seem, although the older names may be retained in Latin. Concepts of varietal forms must be defined and communicated to others in the same way as those of species.

Biological variation is such that it is often very difficult to draw lines between different entities, and botanists are faced with this problem as much as fern growers are. Every plant is slightly different, and it is therefore not surprising that we have literally hundreds of varietal names, many of them described correctly according to the *Code.* Much depends on individual concepts, but if we cannot define our varieties clearly and in such a way as to convey these concepts to others, then I think we must reassess their standing as varieties. There are of course no criteria that characterise a 'good' or 'bad' variety, but there are those we could consider to define varieties worth perpetuating. Their attractiveness and sufficient distinctness from similar varieties are, after all, criteria used in other horticultural groups. I suggest that the fern-growing fraternity should be more critical in their acceptance of new varieties and the naming of old ones.

Another aspect of taxonomic research where amateur involvement is invaluable is that of plant distribution recording. There is a computerised data bank (Biological Records Centre), financed by the Government, which stores information on a National Grid basis for the production of maps such as those in the *Atlas of Ferns of the British Isles.* The Botanical Society of the British Isles further maintains records of the occurrence of vascular plants in 152 units (vice-counties) and the BPS liaises with the BSBI Records Committee through our Recorder, Tony Worland. Thus, lists of the flora of specific counties may be compiled and published as Floras, with descriptive and ecological data about ferns and flowering plants. Professional taxonomists spend much of their time preparing such floras on a county, country or even wider basis (e.g. *Flora Europaea*). These works often contain keys to facilitate identification, and I see no reason why this method should not also be used to identify varieties. Once a definitive list of varieties has been compiled, I suggest the Society should produce a "Garden Fern Flora".

SOUTHPORT FLOWER SHOW — 22—24 AUGUST 1985

A R Busby

The dry but heavily overcast skies matched the mood of Southport which is still experiencing severe financial problems. It now appears to be a heavy burden on the rates of the Borough of Sefton.

Florally, it is still undoubtedly a great show, but there are increasing signs that it does not have the pulling power it has enjoyed in previous years. Even the horticultural press now appears to have abandoned it to its fate and several of the large horticultural sundries firms have also pulled out. Throughout the three days of the show there was much speculation as to whether or not the show would take place next year. However, I was assured that that the show will be held in 1986 on the 21—23 August.

1985 has been very much a fern growers' year and all the entries reflected this summer's cool, wet conditions. Unfortunately, several exhibitors failed to read the schedule carefully and they had to be disqualified. Exhibitors must realise that if the class demands three varieties, two varieties and a species, however well grown, cannot be accepted. However, it was pleasing to see that the quality of presentation commented on last year was maintained.

This year's judges were Mrs H Key and A R Busby.

The prize winners are listed in order of winning.

Class 8 Six hardy British ferns (Dissimilar)
D J Kershaw, B Russ, J H White (three entries)

Class 9 Six greenhouse ferns (Dissimilar)
J B White, B Russ (no first awarded) (two entries)

Class 10 Three hardy British ferns (species not varieties)
D J Kershaw, B Russ (four entries)

Class 11 Three foreign ferns (Hardy in Great Britain)
B Russ, D J Kershaw, W Kirby (four entries)

Class 12 Three Phyllitis (scolopendrium, now Asplenium scolopendrium) (three distinct varieties)
W Kirby, J B White (four entries)

Class 13 Three Polypodiums (three distinct varieties)
No award given (two entries)

Class 14 Three Polystichums (three distinct varieties)
A Shellard, W Kirby, B Russ (three entries)

Class 15 Three Athyriums (three distinct varieties)
J B White, W Kirby, B Russ (three entries)

Class 16 Three Dryopteris (three distinct varieties)
J B White, W Kirby, B Russ (three entries)

Class 17 Three Aspleniums (excluding A. scolopendrium) (three distinct species and/or varieties)
B Russ, H C Shepherd (joint first award) (three entries)

Class 18 One British fern (any kind or variety)
B Russ, H C Shepherd, P B Atack, J R White (six entries)

Class 19 One greenhouse fern
Mrs E A Gibb, J R White (no first awarded) (six entries)

The Silver Perpetual Challenge Trophy, awarded to the exhibitor who accumulates the most point, was won by Mr J R White of Lydiate, Lancashire.

CORRECTION: Vol 3, part 1, page 30:
Fern Wins Notable Award in Holland should read Fred Jackson, not A R Busby.

OBITUARIES

JAMES DAVIDSON, MB, ChB, FRCP

It was with deep sorrow that I have just heard that James Davidson died on May 17 at his home in West Linton, Peebleshire. James was one of my best friends, of over fifty years standing, and I never failed to visit him at least once a year to talk over old times. When first we met he was attached to the forensic section at New Scotland Yard, and in those days was keenly interested in alpine plants and was closely associated with the Scottish Rock Garden Club — of which I am a life member — and on retirement he developed his garden into a home for a very good collection of alpines, which he and Connie, his wife, grew with expert care. James, in due course, became President of the S.R.G.C. At the same time he became interested in ferns, became a member of the B.P.S. of which he also served as President, an office which received his dedicated attention. Many are the expeditions we shared visiting ferny areas of this country under the auspices of the B.P.S., outings which I shall always remember as very happy ones. Mrs Davidson died some years ago, and James continued to tend his garden at West Linton as long as he was able. He had reached the good age of 89 when he died. I shall always remember him as a kindly man, a keen plantsman, and a warm-hearted friend.

Reg Kaye

STANLEY WALKER, 1924—1985

Dr Stanley Walker, President of the Society from 1975 until 1979, died on July 5th, 1985.

Stanley Walker was born on 7th April 1924 and was always proud of his Yorkshire origins. After naval service on Russian convoys during the war, he went to the University of Leeds in 1947 as a mature student to study Botany. Professor Irene Manton had recently been appointed to the Chair of Botany and, after gaining a first class honours degree, Stanley became her first research student. The subject of his Ph.D. thesis was the cytology and taxonomy of *Dryopteris,* and in particular the evolutionary relationships of the tetraploid species *D. cristata, Dr. carthusiana* and *D. dilatata,* and the newly discovered diploid form of *D. dilatata* which he described as a new species, *D. assimilis* S. Walker (now alas, to be known by an earlier name, *D. expansa*). During this time his fellow students included both Molly and Trevor Walker, both also studying fern cytogenetics. On completing his thesis, Stanley moved to Liverpool to take up a post as lecturer in the Department of Botany at the University. Here his work on *Dryopteris* broadened to include study of the North American species, and his detailed cytogenetic work resulted in some classical papers demonstrating the reticulate pattern of evolution that we now know to be so typical of fern genera.

Together with Philip Sheppard, Stanley helped to establish the new Department of Genetics in Liverpool. It was in this department that Stanley began work on human chromosomes, and in this field he spent the rest of his scientific career. He built up and directed the medical Cytogenetics Unit, and helped to develop genetic counselling throughout Merseyside. Many a family with a history of Down's Syndrome or other chromosomal abnormality has been guided by his wisdom. Despite his heavy commitments in this work, Stanley retained an interest in ferns, and in 1971 took on a research student to continue the cytogenetic work on *Dryopteris.* He was elected

President of the British Pteridological Society in October 1975 and served until February 1979. Although he could not spare the time for field meetings, he attended committee meetings and always managed to visit the Society stand at Southport Flower Show when he was President. Many of us will remember the gentle, but firm way he would make his point in committee; he would always get to the root of a problem. Those who were able to attend the AGM in February 1979 will remember the fascinating address he gave on his interest in ferns and their chromosomes, and how this led on to his work in genetic counselling. In 1979 he was made a Vice-President, and although we did not see much of him at meetings, Stanley could always be relied upon to discuss and give advice to those responsible for guiding the Society. Unlike scientific achievements that can be written and published, these human aspects, known albeit to fewer people, are the greater loss.

To Olive, his wife, and to his family we offer our kind thoughts and sympathy.

Mary Gibby

Dr Stanley Walker

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Last full membership list published in Vol. 2, No. 1, 1979

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Meetings Committee: K Kavanagh, A R Busby, M Rickard, J R Woodhams, M Fyfe

Saturday 8 March	Annual General Meeting at the Chelsea Physic Garden, 66 Royal Hospital Road, London at 2 pm. Speaker: J Bond of the Savile Gardens, Windsor.
Saturday 17 May	Visit to the Royal Botanic Gardens, Kew. A guided tour of the new conservatory by John Woodhams. Meet at the Fern Houses at 2 pm.
Saturday/Sunday 7/8 June & Wednesday 11 June	Weekend meeting at York. Meet at the John Bull, Laverthorpe, York, on Friday evening. On Saturday morning at Skipwith village (about 8 miles SE of York) at 10 am. On Wednesday meet at 10 am at Strensall (SE 637 601). *Leaders:* James Merryweather and Jack Bouckley.
Saturday 21 June	Visit to RHS Wisley followed by Eric and Pat Robert's garden. Meet at the main gates of Wisley at 10 am. *Leaders:* Eric and Pat Roberts
Sunday 20 July	Ray and Rita Coughlin's Garden. Assemble at 17 Alvechurch Highway, Lydiate Ash, Bromsgrove, Worcs. Open all day, please bring your own lunch. Grd Ref: 32/974753. *Leader:* A.R. Busby
Friday-Tuesday 1-5 August	Ferns of North Wales. Course at the Drapers Field Centre, Betws-y-coed, Gwynedd. *Tutor:* Marian Fyfe.
Saturday/Sunday 15/16 August	Weekend meeting at Betws-y-coed, Gwynedd. Meet each morning at the Waterloo Hotel, Betws-y-coed at 9 am. Accommodation at the Waterloo Hotel. *Leader:* Marian Fyfe.
Thursday-Saturday 21-23 August	Southport Flower Show, competitive fern classes. Society's stand in tent 2.
Friday-Sunday 12-14 September	Fern Gardens, past and present. A gardeners' meeting at Usk, Gwent, South Wales. Meet each morning in Three Salmons Hotel Car Park at 9.30 am. *Leader:* M H Rickard.
Saturday 18 October	Autumn Indoor Meeting, at the Derbyshire College of Higher Education, Kedleston Road, Derby, DE3 1GD, in room E904 at 2 pm. Speaker: Dr A Willmot on 'The Ferns of Derbyshire'.

For full details of all these meetings and available accommodation please consult your Meetings Programme.

REGIONAL DAY MEETINGS

If you would like details of additional day meetings in the following areas, please contact the local organiser, enclosing a stamped addressed envelope.

South-west England: Christopher and Mary Potts, 4 Kennel Lane, Webbington, Nr Axbridge, Somerset. Tel: 093 472 545.

West Midlands: A R Busby, 16 Kirby Corner Road, Canley, Coventry. Tel: 715690.

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PTERIDOLOGICAL
SOCIETY

BULLETIN

VOLUME 3 NUMBER 3
1986

Edited by A.R.Busby

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Booksales Organiser: J.W. Dyce, 46 Sedley Rise, Loughton, Essex IG10 1LT

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges and a sport exchange scheme. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. SUBSCRIPTION RATES (due on 1st January each year) are Full Personal Members £10, Personal Members not receiving the *Fern Gazette* £7.50; Student Members £5; Subscribing Institutions £12. Family membership in any category is an additional £2. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £1.50 extra to cover bank conversion charges). Airmail postage for all journals — an extra £3.50, or for those not receiving the *Fern Gazette* £2.50.

(Front cover, The Society's new logo designed by the President, Mrs Gwladys Tonge).

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from the Treasurer (address above), from whom further details can be obtained.

MISSOURI BOTANICAL
APR 1 1987
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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 3 1986 No. 3

SECRETARIAL NOTES

MEETINGS CARDS — Meetings cards for 1987 are enclosed with this Bulletin to all inland members. Overseas members visiting Britain can obtain them on application to the Meetings Secretary.

COMMITTEE VACANCIES — In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1987. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 1 March 1987.

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SUBSCRIPTIONS 1987 — Members are reminded that subscriptions for 1987 are due on the 1st January 1987 and should be paid to the Assistant Secretary (Membership), British Pteridological Society, c/o Dept of Botany, British Museum (Natural History), Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL — Our journals can be sent by airmail to overseas members, provided they advise the Assistant Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

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AFFILIATIONS TO THE ROYAL HORTICULTURAL SOCIETY — Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. A small number of tickets are available for the Chelsea Show and the Great Autumn Show. These tickets will be allocated to members on a first-come-first-served basis. There are also two transferable tickets available for all other RHS Shows. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE — The American Fern Journal, a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND — This fund, set up as a memorial to one of our Society's great fern growers — Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorius achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy

Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

BINDERS for the BPS BULLETIN — Binders for volumes of the BPS BULLETIN are available from the General Secretary. Attractively produced with red hardboard covers and gold blocked lettering on the spine: only £3.50 each, postage & packing included. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby.

ANNUAL GENERAL MEETING 1986

MINUTES of the 83rd ANNUAL GENERAL MEETING held at the Chelsea Physic Garden, Royal Hospital Road, Chelsea, London on Saturday, 8 March 1986 at 14.15 hours.

IN THE CHAIR: The President, Mrs Gwladys Tonge.

PRESENT: P J Acock, J Barker, P Barnes, J Bond, J Bouckley, A R Busby, J M Camus, A Croxford, J W Dyce, M Fyfe, M Gibby, B Goldsmith, M Haines, N Hards, R Hibbs, A Hoare, G Hoare, Prof. R E Holttum, D Holly, R P H Lamb, A C Leslie, B & J Mitchell, M Nimmo-Smith, B S Parris, A M Paul, W Pierozynski, B O'Shea, M H Rickard, P Ripley, C J Rogers, R & B Smith, B A Thomas, J Westfold, S Williams, A Willmot, A J Worland.

ITEM 1 — APOLOGIES FOR ABSENCE — F Bayford, P J Edwards, J Ide, A Ogden, R J Rusb, G Thomas, J R Woodhams.

ITEM 2 — MINUTES OF THE ANNUAL GENERAL MEETING held on 16 February 1985 were read and approved.

ITEM 3 — MATTERS ARISING from those minutes — None.

ITEM 4 — HONORARY GENERAL SECRETARY'S REPORT — The Society has enjoyed another busy year with meetings well attended. National meetings always seem to generate the same old faces. Perhaps other members are reluctant to come along either because they are strangers to us or because they fear that meetings are only organised for experts. Let me assure them that nothing could be further from the truth. We look forward to seeing more members at national and regional meetings where they will receive a warm welcome.

Of course, the highlight of last year's meetings programme was Jimmy Dyce's 80th birthday celebrations at Kew in May; a meeting that will long be remembered by those of us who were lucky enough to be there.

During the past year the Society was pleased to take part in the formation of the 'Conservation Association of Botanical Societies' (C.A.B.S.) which is an association involving the Botanical Society of the British Isles, the Botanical Society of Edinburgh, the British Bryological Society, the British Lichen Society, the British Phycological Society and the Fauna and Flora Preservation Society. A C Jermy has kindly agreed to act as our representative and further details about this association are available from the General Secretary.

The Spore Exchange continues to operate with great success due largely to the diligent work of the organiser, R F Cartwright. However, he cannot operate without your co-operation and he is always pleased to receive spores of named British species and varieties. The Society's new Plant Exchange Scheme also requires your support and the organiser, Richard Lamb, would be pleased to hear from you.

I am not in a position to give firm membership figures but we appear to have enrolled 55 new members in 1985. I have no figures for losses but the full membership list published in Volume 3, part 2 of the Bulletin numbers some 625 members and subscribers.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 — HONORARY TREASURER'S REPORT — The Treasurer distributed copies of his balance sheet and after explaining the Society's income and expenditure for the past year, he outlined his case for an increase in subscriptions to take effect from the 1st of January 1987. He reminded the meeting that the Society was now quickly approaching the point where we will be in the red, as he had predicted at the time of the last subscription increase in January 1981.

Dr Thomas's report was approved and adopted by the meeting and the President thanked Dr Thomas.

ITEM 6 — TREASURER'S PROPOSALS FOR 1987 SUBSCRIPTION INCREASE — The Treasurer's proposed subscription increases to take effect from 1st January 1987 are: Full membership to increase by £3 from £7 to £10, Optional membership to increase by £2.50 from £5 to £7.50, Subscribers by £4 from £8 to £12 and Family membership remaining £2 extra on all categories. Dr Thomas proposed that Student membership should remain £5.

After a brief discussion the motion to increase the subscription by the above amounts was put to the meeting. The motion was passed unanimously.

ITEM 7, REPORTS OF THE EDITORS —
'The Bulletin': A R Busby — In response to some criticism the Secretary commented that he hoped to do better next year with the help of Miss Alison Paul as assistant editor.

'The Pteridologist': M H Rickard — Mr Rickard was pleased to report that in spite of copy being slow for much of the year he had now received an abundance of material and looked forward to publishing this year's journal on time.

'The Fern Gazette': The Editors of the 'Fern Gazette' are now Dr Mary Gibby, Dr Barbara S Parris and Mr James Crabbe. Copy for Volume 13, part 2 has been received from Tasmania, West Germany, the United States of America and the United Kingdom. They anticipate no problems in bringing out this number on schedule.

The President thanked the Editors for their reports.

ITEM 8 — ELECTION OF OFFICERS AND COMMITTEE — The President was pleased to note that the Honorary General Secretary, A R Busby and the Honorary Treasurer, Dr B A Thomas had agreed to serve for another year. Meetings Secretary: the General Secretary reported that he had received a letter from Miss K Kavanagh expressing her wish not to stand for another year. The President expressed the appreciation and thanks of the Committee and members to Miss Kavanagh for all her hard work. It was proposed by A R Busby and seconded by M H Rickard that Mrs Marion Fyfe should stand for election as Meetings Secretary. Mrs Fyfe kindly accepted the nomination and was duly elected.

Committee — The Secretary reported that P J Edwards and J R Woodhams were due for retirement as the longest serving members of the Committee. He also explained that Mrs M Fyfe would retire prematurely now that she is elected as an Officer of the Society. This makes three vacancies on the Committee this year. Two nominations had been received for the vacancies: Miss Alison Paul of London proposed by A R Busby, seconded by Josephine Camus, and Miss Jennifer Ide of Eltham, proposed by A R Busby, seconded by J W Dyce. Miss Paul and Miss Ide were duly elected. As there were no further nominations for the third vacancy, J R Woodhams had kindly agreed to serve on the Committee for a further year.

ITEM 9 — ELECTION OF AUDITORS — Mr Jack Bouckley of Harrogate and Mr Richard Lamb of Daventry had notified their willingness to serve for a further year and were duly elected with the thanks of the President.

ITEM 10 — ANY OTHER BUSINESS — 1991 Celebrations: The President reminded the meeting that the Society's Centenary is only six years away and that we must start to consider ideas for the celebrations.

The Meeting closed at 2.45 pm

A R Busby
Hon.Gen.Sec.

THE AMERICAN FERN SOCIETY INC

wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the "Fiddlehead Forum" six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to "Fiddlehead Forum", the scientific quarterly "American Fern Journal". Membership costs $5.00 and $8.00 per annum, respectively. For particulars please write to Dr David S Barrington, Dept of Botany, University of Vermont, Burlington VT 05401, USA. Prospective members residing in Great Britain should write to Dr B A Thomas, Dept of Botany, National Museum of Wales, Cathays Park, Cardiff CF1 3NP. British members should note that the American Fern Society has to add a postage surcharge for overseas members. Membership will cost $7.00 and $12.00 respectively.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1985

ORDINARY ACCOUNT

EXTRACTS FROM 1984			
INCOME			
£3771.47	SUBSCRIPTIONS		£3962.17
102.00	DONATIONS		124.01
	INTEREST ON ACCOUNTS		326.01
	SALES — Booksale profits	£ 99.00	
	Offprints	110.69	209.69
			£4621.88
EXPENDITURE			
£ 729.00	METLOC — BULLETIN		£ 962.00
1378.00	METLOC — GAZETTE		1682.00
1071.00	METLOC — PTERIDOLOGIST		1227.00
113.88	PRINTING AND STATIONARY		346.56
1022.81	ADMINISTRATIVE COSTS AND POSTAGE		942.67
31.00	SUBSCRIPTIONS TO SOCIETIES		71.10
83.10	MEETING COSTS		44.00
81.40	SOUTHPORT FLOWER SHOW		93.70
	PRINTING OF INDEX		302.00
	T-SHIRTS		347.65
	BANK CHARGES		14.94
			£6033.62
£ 357.06 D.R.	BALANCE FOR THE YEAR		£1411.74 D.R.
	BALANCE CARRIED FORWARD FROM 1984		3982.01
	BALANCE CARRIED FORWARD TO 1986		£2570.27

PUBLICATIONS ACCOUNT

BALANCE CARRIED FORWARD FROM 1984		£ 479.00
SALES — Gazettes	£ 53.72	
Hardy Ferns	657.50	
Guide to H. Ferns	522.00	1233.22
		1712.22
PRINTING		298.00
CARRIED FORWARD TO 1986		£1414.22

GREENFIELD FUND

BALANCE CARRIED FORWARD FROM 1984	£1761.26
INTEREST	120.00
BALANCE CARRIED FORWARD TO 1986	£1881.26

LECTURE MEETINGS AND VISITS

THE SPRING INDOOR MEETING. After the business of the AGM had concluded, members settled back for the spring indoor meeting. This year, we were fortunate enough to be visited by Mr John Bond, VMH, Keeper of Savill Gardens, Windsor, a garden that our Society has visited many times. His talk, supported by a splendid selection of colour slides, explained the founding of the garden by Eric Savill in 1932, and described how it had developed over the years to become one of Britain's foremost gardens.

Mr Bond emphasised his own thoughts on ways in which a garden can be developed and outlined the many problems he and his staff encountered over the years, and how they managed to either solve or bypass them. His talk encompassed the entire spectrum of the gardens including the wealth of established trees and the need for forward planning on replanting. Then he showed how the shrub layer had been developed, illustrating many of his own favourite species, and also how the extensive herbaceous borders had grown from a single glade planting in the pre-war years.

From his talk members were able to glean a wealth of information and useful tips on general gardening, for example, the importance of mulching to conserve moisture, how to arrange the planting of trees and shrubs to exploit the potential of autumn colour (he mentioned the value of Royal fern, *Osmunda regalis,* for this) and the use of EN-MAG fertiliser to keep gardens looking green and healthy.

Mr Bond had begun by expressing a worry that his talk and slides might have little fern content; his concern was unnecessary, for his slides included such choice ferns as *Dryopteris erythrosora, D. wallichiana, Polystichum munitum, Blechnum chilense* and several other hardy ferns and varieties, both British and foreign. After a short but brisk period of questions and answers the President, in expressing the thanks of the meeting to Mr Bond, said his talk had been an inspiration to all the gardeners present and she endorsed everything Mr Bond had told us about the range of beauty and interest at Savill Gardens throughout the year.

A R Busby

The Autumn Indoor Meeting was held on Saturday, 18 October, when twenty-one members and guests assembled at the Derbyshire College of Higher Education, Kedleston Road, Derby, to hear Dr Alan Willmot give a talk entitled 'Ferns of Derbyshire, Past and Present'. Dr Willmot began with a review of old records of ferns and fern allies in the county and listed ten species now presumed extinct. Of these ten, he considers *Hymenophyllum wilsonii* and *Asplenium billotii* to be possible errors. The remaining eight presumed absent from the county are: *Thelypteris palustris, Osmunda regalis, Dryopteris oreades, D. cristata, Polystichum lonchitis, Cryptogramma crispa, Lycopodiella inundata* and *Selaginella selaginoides.*

Having considered the county's past fern flora, he went on to illustrate the present-day fern flora of Derbyshire with colour slides, describing their distribution, frequency and habitats. Not surprisingly, Derbyshire has its fair share of buckler ferns, shield ferns, lady ferns, polypodies and spleenworts not to mention moonworts and adders-tongue ferns. Representing the fern allies in Derbyshire are five horsetails namely *Equisetum arvense, E. telmateia, E. sylvaticum, E. palustre* and *E. fluviatile;* the clubmosses *Diphasiastrum alpinum, Lycopodium clavatum* and *Huperzia selago* are also present.

However, Derbyshire's boast must be the remarkable occurrence of the sea spleenwort, *Asplenium marinum* on a hospital wall in Derby and Dr Willmot displayed a colour-slide of his 'find'.

Dr Willmot ended his talk with a plea to members visiting the county in the coming years to pass on any information they may acquire on ferns in Derbyshire.

After refreshments, Martin Rickard displayed his colour-slides of the Usk meeting in September which revived many good memories for those of us who were at that gathering.

Thanks are due to Dr Alan Willmot for presenting such an interesting talk and for kindly providing the refreshments during the afternoon and to Miss Jane Barker for assisting him.

A R Busby

KEW GARDENS — 17 MAY. The meeting at Kew, now almost an annual event, has become one of the most popular meetings with our members. This year, 42 members and guests assembled in the Fern potting shed. The meeting began with a tour of the fern houses led by John Woodhams, who pointed out to us many of Kew's exotic ferns in his usual knowledgeable way, often relating how particular ferns came to be in the collection. Sadly, this visit may prove to be the last to the old houses as they are due for demolition now that the new conservatory has been built.

After our tour of the greenhouses we reassembled in the potting shed to hear a short talk by Mr Nick Stewart, the recently appointed Conservation Officer for the Conservation Association of Botanical Societies (C.A.B.S.). Mr Stewart's talk mainly centred on the aims of C.A.B.S. and how all the participating societies may benefit from the association. After Mr Stewart's talk John led the meeting to the new conservatory which has recently been built at a cost of 4.5 million pounds. This was a privileged preview as the house was still being landscaped. We toured the conservatory, dodging the contractors' equipment, and although it did look very bare despite several hundred plants already being in place, we did get a taste of how it will look when it is opened to the public later in the year.

John also conducted the meeting around the 'workings' of the new conservatory where every opportunity has been taken to employ modern technology. This was most noticeable in the use of computers for monitoring such variables as light, temperature and humidity. Thanks are due to Mr Nick Stewart for taking time to speak to us about the work of C.A.B.S. and to John and Joan Woodhams for another enjoyable meeting at Kew and for providing us with very welcome light refreshments.

A R Busby

RHS GARDEN, WISLEY, 21 JUNE. Twenty-five members and friends assembled in the car park at Wisley in rather chill, cloudy weather. Fortunately, we were soon cheered by the very warm, friendly welcome we received from our leader for the day, Mrs Pat Roberts. After explaining the layout of the garden and where we would be able to discover Wisley's ferny treasures, Pat led us to a ferny glade where the group was able to wander around carefully examining the various cultivars of *Dryopteris, Athyrium* and *Polystichum.* A discussion developed concerning the occurence of sporangia on *Polystichum setiferum* 'Pulcherrimum Bevis', which led to a careful examination of several plants of 'Bevis' close by. After a few minutes of much frond bending and twisting, diligent searching by Margaret Harris led her to discover what appeared to be five indusia clustered close together on a pinna of a 'Bevis' close to the path. Margaret, who lives locally, decided to keep an eye on their development wih the intention of collecting any spores that may develop, the treasured pinna was carefully marked with a piece of cotton. I hope to report further on developments.

The group now became fragmented as members wandered off to make their own discoveries. After an excellent lunch in the Wisley Tea-rooms, it was arranged that members would meet up at Pat and Eric Roberts's garden for tea and a tour of their garden.

Pat's passion for ferns was very evident, for as we wandered around their wooded garden, varieties of buckler, lady, shield and harts-tongue ferns were to be found nestling among Pat's other garden treasures. Eric's keen interest in Rhododendrons and other shrubs evident over large parts of the garden ensures provision of more shade for other ferns. While we were enjoying light refreshments, Pat proudly displayed a tray of the North American 'Walking Fern', *Camptosorus rhizophyllus.* This aroused much interest because it is a fern we rarely have the opportunity to see.

On behalf of everyone who attended the meeting, I thank Pat and Eric for kindly providing us with a most enjoyable day.

A R Busby

RAY AND RITA COUGHLIN'S GARDEN — Sunday 20 July. Twenty-five members and friends accepted Ray and Rita's kind invitation to visit their remarkable garden near Bromsgrove, Worcestershire.

A gentle slope from the rear of the house provides an excellent opportunity for a small stream feeding two small pools and with the backcloth of trees and shrubs the whole effect is one of peace and solitude.

Every opportunity is taken to display Ray and Rita's keen interest in alpines, trees and shrubs, but it is their fern collection that attracts our members. Choosing the right adjectives is difficult but a passing comment by one of our newer members at the end of the day summed it up for all of us — 'quite wonderful'. It might be matched if a great deal of time and money was spent to acquire the various treasures to be found there but their garden is a testimony to Ray and Rita's skills as propagators. Their garden has featured in meetings reports before and lack of space prevents me from producing a very long list of their hardy fern varieties. I urge any member with a keen interest in the propagation and cultivation of hardy ferns to arrange to go and see their garden. No motorway journey is too long nor public transport service too expensive. A visit to Alvechurch Highway is an object lesson on fern growing.

On behalf of all those present at the meeting, may I thank Ray and Rita for their kind hospitality.

A R Busby

REGIONAL MEETINGS 1986

WEST MIDLANDS

A R Busby

'Welcome to Spring' Flower Show — 19-20 April. Once again, by kind permission of the Solihull Horticultural Society, local members were allowed to display Society literature and plants to advertise our Society's activities. I take this opportunity to thank Ray Smith for spending time with me to man the stand and answering many questions on ferns and fern growing. I would also like to thank those members who called in to see us.

Bernard and Jean Mitchell's Garden, 31 Derwent Crescent, Kettering — Sunday 17 August. 18 members and guests enjoyed an afternoon wandering around Bernard and Jean Mitchell's fascinating garden. Bernard and Jean are truly 'plant-persons', keen propagators of hardy plants and shrubs from many parts of the world. Consequently, their garden is full of really choice herbaceous plants and shrubs. Members were particularly impressed by the lengths to which they are prepared to go in order to provide shade and moisture for the propagation of hardy ferns. Their methods provide a real object lesson on raising ferns from spores.

Thanks are due to Bernard and Jean for allowing us to visit their garden and for providing us with refreshments. Visits to their garden are by appointment only and they have raised hundreds of pounds for charity. Arrangements to see their garden can be made by telephoning them on (0536) 520070.

Matt and Margaret Busby's Illustrated Wine and Cheese Party. On Friday evening, 10 October, 21 members and friends gathered at the University of Warwick for our usual autumn get-together.

Ray Smith began the evening by showing transparencies taken at gardens and fern society meetings, notably the Usk meeting. John Collins displayed slides of ferns and plants seen this year. Others contributing slides were Alan Ogden and Richard Lamb. Richard Lamb's final slide was a remarkable study of a majestic stag silhouetted against bright water! Geoffrey Hickman brought along two finely grown ferns, *Lygodium palmatum* and *Davallia pyxidata*.

The highlight of the evening was seeing a pressed frond of *Asplenium scolopendrium* 'Reniforme' found recently by Ray Smith in a garden at Little Quarme, Somerset. Everyone was pleased to hear that Ray had acquired the plant to add to his own collection. This variety is described and illustrated in E J Lowe's 'Our Native Ferns' Vol. 2, page 237. Apparently it was originally found in Devon in 1850. Interestingly, Ray Smith's find is truly 'reniform' and is a better form that that illustrated by Lowe. We all look forward to the results of your propagation Ray!

Thanks are due to everyone who took the trouble to bring along slides or plants to make the evening interesting.

SOUTH EAST

Pat Acock and Paul Ripley

Bromley and hayes (Kent) Spleenwort Trail, Friday June 26th — By way of a change, the first field meeting of the year was set for a long summer evening to look at Aspleniums on two rather special church walls. Eight of us met at Holy Trinity Church, Bromley Common. On a flint-knapped wall with ageing mortar, three spleenworts: *Asplenium ruta-muraria, A. trichomanes,* and *A. adiantum-nigrum* were observed, growing to well-developed plants, although some of the *A. ruta-muraria* was suffering from lack of water. *Polypodium vulgare* was also plentiful and *Asplenium scolopendrium* was found on the limestone of the church building. *Dryopteris filix-mas, D. dilatata* and *Pteridium quilinum* were present in the churchyard.

Moving on to Hayes Church, only about 2 miles away, in complete contrast, a limestone wall supports probably the largest colony of *Asplenium ceterach* in the South-East. Even *A. trichomanes* and *A. scolopendrium* were outnumbered by the *A. ceterach.* A search of the churchyard did not re-establish the record of mistletoe growing on yew found some time ago, but small colonies of *Polypodium vulgare, Dryopteris filix-mas* and *A. ruta-muraria* were seen on a side block wall.

The meeting finished with much appreciated coffee and beautiful cakes thanks to Grace Acock.

Joint Meeting with the Kent Field Club — Saturday, September 7th 1986 — Hempstead Wood, Benenden, Kent — This meeting, suggested by Joyce Pitt, of the Kent Field Club was enjoyed by seven BPS members and eight members of the Club.

Hempstead Forest lies between Benenden and Sissinghurst on somewhat acid sandstone and clay, a substrate more typical of Sussex than Kent. It covers a huge area but is under the control of the Forestry Commission and almost completely covered by conifer plantations. Much of the ground was rather dry and populated by *Pteridium aquilinum,* with *Blechnum spicant* on banks. In the wetter areas *Dryopteris dilatata* and *D. carthusiana* were common and we were pleased to find some handsome plants of the hybrid *D. x deweveri,* clearly distinguishable from adjacent *D. dilatata. Athyrium filix-femina* was also abundant in poorly drained areas. On the edge of rides and alongside road verges *Polypodium* (probably *P. interjectum)* was seen, and *Dryopteris filix-mas, D. affinis* subsp. robusta and subsp. borreri and var. *robusta* were present, though nowhere very common.

In the afternoon the south-western edge of the forest proved to be disappointingly well-drained, but *Oreopteris limbosperma* was found in scattered locations. The Forestry Commission have asked the KFC for advice on management of the wood; from the pteridological point of view, preservation of wet areas and a slightly less intensive coniferous monoculture would be helpful.

Non-pteridological interest was provided by observations on the traffic behaviour of ants on their own multi-lane 'autostrada', and an excellent cream tea in Sissinghurst.

We were extremely pleased to be able to impart some of our hard-earned, if patchy, knowledge of ferns to botanists who taught us much, not least about the many species of fungi growing in the forest. We hope that a joint meeting can be repeated in the future.

VISIT TO PHILPOTS WOOD AND 'NYMANS' — 26th July

On the 26th July sixteen members and guests met in West Sussex to visit Philpots Wood at West Hoathly and 'Nymans' at Handcross. The omens were good — *Polystichum setiferum* 'Divisilobum' was seen in a small fern garden in the village of West Hoathly, and many fine specimens of *Asplenium ruta-muraria* were growing on the walls of the churchyard.

Philpots Wood was entered after a walk through Philpots Farm and school. It is in a heavily-wooded, steep-sided, west-leading valley which is dry until fed by a stream halfway down. Along the north side of the valley, Tunbridge Wells sandstone outcrops for at least 100 yards, forming irregular cliffs up to 20 feet in height. Nine separate flourishing colonies of *Hymenophyllum tunbrigense* were found on the rocks, in spite of recent dry weather; many fronds were bearing sporangia.

Further down the valley, a spring fed the stream and *Dryopteris aemula* was found on steep banks above the spring. Along the stream were found some luxurious *Asplenium scolpendrium* and several large, but rather unhappy, plants of *Polystichum setiferum. Blechnum spicant, Pteridium aquilinum, Athyrium filix-femina, Dryopteris dilatata, D. filix-mas, D. affinis* subsp. borreri (unconfirmed) and subsp. affinis were abundant in the wood. *Equisetum telmateia, E. arvense* and *Polypodium* sp. were found in the lane near West Hoathly.

In the afternoon, Nymans garden (National Trust) at Handcross was visited. On a previous visit the Head Gardener had been very helpful in showing us the features of this garden, which is based on slightly acid sandy loam, where sandstone is never far below the surface, and which is visited by 70,000 people a year. Rainfall averages 30 inches a year, frosts are less common than lower in the Weald (highest point of the garden is 490 feet) and autumns are dry but quite cool. Rhododendrons, conifers and magnolias are a feature of this garden which was founded by Harold Coomber who collected widely in South America.

In the garden, *Polystichum munitum, Polystichum setiferum* 'Divisilobum' and 'Divisilobum plumosum densum', *Polypodium* sp. and *Asplenium scolopendrium* had been planted and *Polystichum setiferum* and *Athyrium filix-femina* were abundant throughout. A feature had been made of *Polypodium* and *Polystichum setiferum* 'Divisilobum' planted in masses around statuary and in borders.

Across the road is some partially-cleared woodland with a number of fine trees planted. *Dryopteris* spp. enjoyed the newly-cleared environment. *D. filix-mas, D. dilatata, D. affinis* subsp. borreri and possibly var. *robusta, Athyrium filix-femina, Blechnum spicant* and *Pteridium aquilinum* were common, and *Oreopteris limbosperma* was found lower in the damper areas.

LEEDS & DISTRICT GROUP

J. Bouckley

The Leeds and District Fern Group have had another very successful year which started last March when a very interesting and instructional talk was given by James Merryweather of York University. This was held in the Lecture room at Harlow Car Gardens, Harrogate. James really went to town with his slides, film and other visual aids which he had brought along and it is quite certain that those members who came along, went back home much more knowledgeable than when they came after hearing this very well prepared talk.

On 7, 8, 9 and 11 June we were hosts to those who attended the National *Pilularia* search, a report of which is in this journal. We moved away from our usual field studies on 28 June when we had a conducted tour round the fern department of Hull Botanic Gardens. Unfortunately Ann Braithwaite, the Curator, was unable to be there but Mr Greatorex of that department proved himself to be a very good guide. After lunch we travelled a few miles further north to the Fern Nursery of Mrs Marston of Nafferton, near Great Driffield, where we were able to see and purchase a very wide selection of well-grown plants.

It was on 12 July that we started our field studies. Dr Sledge of Leeds University was our leader at Birk Gill which is rather a secluded valley within the estate of the Earl of Swinton who had very kindly given us permission to do this survey. When we set off things did not look at all promising weather-wise; grey sky, mist and drizzle would make the undergrowth of this wooded glen very damp and uncomfortable.

In the past the area has often been trespassed on by day trippers with the consequent damage which may be caused when unauthorised persons get off the beaten track. This gives landowners a legitimate excuse to erect barbed wire fences which then have to be crossed by one means or another. Once over these obstacles the going was not too bad at all and the weather had improved. As we worked upstream there were wooded slopes, wet areas and bog to our right and to the left was pasture land, then steep slopes eventually turning into a basic shale cliff with mica content. The latter was dripping with water even after three weeks without rain, and it was this cliff which caused a lot of excitement with many plants of *Asplenium viride* growing at all heights. How strange to see this plant in such profusion in such a place. *Oreopteris limbosperma* was very numerous in the surrounding area and looked really spectacular. We stopped for lunch in one of the places where there was enough dry rock outcrop to provide seating (right next to a gigantic wasps nest hanging from a tree branch stretched over the stream). After this we continued on through this fern hunter's paradise, but unfortunately time was not on our side and we had to retrace our steps before we had finished exploring this Gill.

One very interesting thing happened as we were going to the meeting place in the morning. Dr Sledge asked me to stop the car near a dry-stone wall in a little village called Healey to check on a site where he had seen *Ceterach officinarum* growing over twenty years ago. It is still there after all these years, despite droughts, severe winters, salted roads and everything else that nature could throw in its direction, right at the side of the road. However, we noted with regret that the greatest enemy of ferns *Homo sapiens,* had sprayed some weed killer over a bed of nettles only inches from the rusty-backs. One or two of the ferns had curled up but some were still green, so it is hoped they will continue to flourish. Apart from the three ferns already mentioned we also saw *Asplenium trichomanes, A. scolopendrium, Athyrium filix-femina, Blechnum spicant, Cystopteris fragilis, Dryopteris affinis, D. dilatata, D. filix-mas, Equisetum* *arvense, E. palustre, Gymnocarpium dryopteris, Oreopteris limbosperma, Phegopteris connectilis, Polypodium* sp., *Polystichum aculeatum* and *Pteridium aquilinum* along the gill, and we also saw *Asplenium adiantum-nigrum* and *A. ruta-muraria* on the local church wall.

All ten members of the party agreed that the day had been a very successful one, as we had found no less than twenty species in the small part of the gill we had covered. We are hoping to get permission to go there again in 1987. We all thank Dr Sledge for his enthusiasm and we realise how fortunate we are to have such an active and knowledgeable member in our group who is so willing to share his past experiences with us.

Our next trip on 2 August took us to the historic town of Skipton. Starting from the market square we went along the footpath which runs between a branch of the Leeds-Liverpool canal and a stream, past Skipton Castle wall towards Skipton Woods, an area which Mrs Eleanor Fisher, our leader for the day, knows very well. The path runs through her garden which borders the woods. Once into the woods it became quite apparent that the whole lay-out was, in the past, quite an important part of the economy of the Castle. Water courses, weirs, dams and reservoirs, all point to the days before electricity, when harnessed water power was used to drive machinery. But all this water also provides the damp atmosphere in which ferns and other plants can grow luxuriantly. *Dryopteris filix-mas* was quite plentiful with huge drifts of it to our left as we moved upstream, then we found a few plants of *Equisetum telmateia* followed by a large area literally covered with *Paris quadrifolia* (herb paris) which was just finishing flowering. The next fern seen was *Athyrium filix-femina.* We then went on to an old quarry where there were many slightly crisped plants of *Asplenium scolopendrium* and some *A. trichomanes* growing in crevices together with *Polypodium* sp. Both *Polystichum aculeatum* and *P. setiferum* were seen, as was the broad buckler fern — *Dryopteris dilatata.*

We returned by another path but did not see any new species though some of us stopped on a slope when Ophioglossum vulgatum used to grow. Children now use this slope for sliding down and the adder's tongue fern could not be found. We went back to Eleanor's garden which is on a step with a stream running through the bottom, a mill race running under the house and an old water course at the top end of the garden on the top of a high retaining wall covered with scollies, spleenworts and various flowering plants. It would take too long to name the numerous plants in this very well-stocked garden, but one of the most outstanding is a particularly fine specimen of a very crisped *Asplenium* 'Crispum'. At the end of the day we had a plant sale which Eleanor had organised in aid of group funds, before finishing with some very substantial refreshments. Many thanks to Eleanor for a most enjoyable day.

On the 13 September we set off to explore one of the well-known limestone areas, Moughton Fell, the home of *Polystichum lonchitis,* the holly fern. We met outside the house of Mr Jim Lord of Austwick, our leader for the day. Eleven of us started off in our cars to cover the first few uphill miles, and then proceded on foot towards the source of Austwick Beck where we saw *Asplenium trichomanes, A. ruta-muraria, Cystopteris fragilis* and *Blechnum spicant. Pteridium aquilinum* was quite plentiful as we carried on towards the exposed the limestone with the grykes.

Mrs Lord supplied us all with very welcome refreshments before joining us on our last short trip — to Feizor's Pot Scar where we were to look for a ramose form of *Asplenium viride.* Again it was a case of looking down the grykes, but our efforts soon paid off with the sight of twice branched and triple branched fronds of this small fern growing with *Dryopteris submontana, Asplenium viride, A. trichomanes, A. ruta-muraria* and some massive *A. scolopendrium.* One small weather worn hole in the limestone which was about eighteen inches deep and about seven inches diameter contained all of these last five.

The last trip of the year was to Ravens Gill, near Harrogate, where we were to try to find *Hymenophyllum wilsonii* which had been seen there some years ago Dr Sledge. He was unable to come with us on this trip but he gave us good instructions regarding its former whereabouts, so on 27 September eight of us met on this private estate, where the owner had given permission for a small number of us to search for ferns. However, in spite of all our searching we could not find this filmy fern, though as we all looked for it in every likely spot, between us we saw dozens of different mosses and grasses together with *Athyrium filix-femina* both green and red stemmed (some fronds were more than 5′6″ in length), *Blechnum spicant, Dryopteris affinis* subsp. *affinis, D. affinis* subsp. *borreri, D. carthusiana, D. dilatata, Gymnocarpium dryopteris, Oreopteris limbosperma, Phegopteris connectilis, Asplenium scolopendrium, Polypodium vulgare* and *Pteridium aquilinum.* Many more species will probably be found when the steep, wooded sides of the gill are searched. We were lucky enough to see *Polystichum setiferum* growing under a hedge along a nearby lane and hundreds of *Asplenium ruta-muraria* in a wall on the same lane.

We are now looking forward to 1987 and many more of these field studies, but I personally look back over 1986 and thank all those who have come along to these meetings and by doing so have helped to make the past year such a success.

Once at the top we soon found ourselves among ferns, with *Asplenium scolopendrium, A. viride, Dryopteris submontana, Asplenium trichomanes* and *Gymnocarpium robertianum* growing down both deep and shallow grykes, then, all of a sudden, Bob Adams, one of our younger members shouted *"LONCHITIS".* This is the plant we had come to see, especially as so many had not previously seen it growing in its natural habitat. There it was, quite a large plant in very good condition, but almost invisible from four or five feet away as it was in a gryke a couple of feet deep. It was photographed and we carried on with our search, finding *Dryopteris filix-mas* and *Athyrium filix-femina* before we came across more holly ferns. We saw a total of about eight plants before we stopped for lunch.

The afternoon session began in style. Jim, who had not worried about stopping for lunch, had carried on with his son looking for more holly ferns and he led us to a small area almost covered with *Juniper communis* bushes and hidden away among these and the limestone blocks were no fewer than twenty-five *Polystichum lonchitis* plants. How nice it is to know that this plant has multiplied after being ravaged during the Victorian Fern Craze. The important point in its favour is that it is possible to pass by it only a few feet away without seeing it. The other ferns seen on the limestone were *Cystopteris fragilis* and a couple of beautiful plants of *Polystichum aculeatum* together with Polypodium sp. When we arrived back at Jim's house he showed us around his marvellous collection of ferns which dates back over half a century, many of which we had never seen before. Polystichums of all shapes, lady ferns of different varieties and many scollies were growing there with lots of different forms of polypodies.

SOUTH WEST REGION

Mary Potts

Great Mis Tor, Dartmoor

Our first meeting took place on the 6th July and was organised and led by Dougal Swinscow. Ten members and friends met on a fine blustery day at Holme Chase and then travelled to Princetown to walk to Great Mis Tor. The flora surrounding the Tor was not particularly interesting and contained some of the usual acid soil indicators, heath bedstraws, potentilla and a small amount of heather, growing on the damp and peaty ground.

The stones of the Tor were enormous and sheltered *Huperzia selago, Dryopteris dilatata* and a *Polypodium* sp. to small to identify, *Blechnum spicant* and *Hymenophyllum wilsoni.* The filmy fern was only found in a small, weather-beaten path and though there seemed to be plenty more suitable sites for it, no more was found on this visit.

After lunch, we travelled to a site near Princetown to look for the only plant of *Cryptogramma crispa* in Devon and found it growing on the wall of a disused building. We investigated various other walls and craters but made no further note-worthy discoveries. The final attraction of the day was a sumptuous strawberry tea at Noel Tanowin's house, much enjoyed by the younger members of the party who had spent the day searching for discarded army equipment around the Tor, thereby working up a tremendous appetite. Thank you Noel for your hospitality and excellent cooking.

Garden Day at Vicar's Mead and Kingsgatchen, Devon.

Our second meeting was organised by Kenneth Adlam and consisted of two visits to gardens containing ferns. Ten members and friends met at Vicar's Mead at East Budleigh and spent the first part of the afternoon looking round this large and interesting cottage garden. The array of plants was fascinating and many species of fern were growing luxuriently on the sandstone escarpments.

Behind the house a particularly steep protected and shaded bank displayed varients of British ferns to perfection. Crested *Athyriums,* divided *Polystichums* and *Adiantum capillus-veneris* were beautifully mixed with Ivies, Geraniums, grasses and many other plants.

One of the most attractive features in this garden was a well, the top of which was covered by a circular sheet of glass. By peering over the edge of the well wall we could see plants of *Dryopteris filix-mas, Asplenium scolopendrium, A. trichomanes* and *Adiantum capillu-veneris* growing in the sheltered habitat of the interior well wall.

During the later part of the afternoon we looked round Kenneth Adlam's own garden at Kingsgatchell and admired the marvellous (and different) array of plants growing there. Kenneth's fern collection was in its usual flourishing condition, some of the ground cover ferns, *Gymnocarpium* and *Blechnum,* speedily covering ground, and the harts-tongues ferns growing there included a particularly fine example of 'Golden Queen'. Even though Kenneth claimed to have lost plants during the winter the garden still looked abundant and undamaged. Rosemary and Dolsheen Adlam gave us a wonderful tea for which we were most grateful. We were able to return to our own gardens revived and enthused by all we had seen in these two very interesting and well maintained gardens.

Derek Fraser-Jenkins Open Day at Newcastle House.
The third meeting of the season took place at Newcastle House, Bridgend, Glamorgan, the home of Derek Fraser-Jenkins.

Twelve members and friends met on the 10th August on what turned out to be one of the wettest days of the summer. We were pleased to see Christoper Fraser-Jenkins who had recently returned from a trip to Madagascar and welcomed his specialised knowledge on the *Dryopteris* species.

As we emerged from a truly marvellous lunch, provided by Derek, the skies opened and it continued to rain for the rest of the afternoon. Undetered by the deluge we all made an extensive tour of Derek's garden, which is a plantsmans paradise containing many rare and exotic trees and plants. We looked at some of the most tender plants growing undercover, amongst them some unusual ferns, brought back by Christopher from various parts of the world.

Christopher spent some time defining and answering questions about the collection of *Dryopteris borreri* growing in the walled garden behind the house and we all finished up in the enclosed front garden admiring some of the tender plants which had amazingly survived last winter. (It was here that I made the personal discovery that *Dryopteris erythrosora* has bright red spore cases which are remarkably attractive).

Some plants and spores were exchanged and the whole party, though damp, enjoyed a most entertaining afternoon in this ancient and fascinating garden with its many hidden surprises and attractions. It has taken some years to persuade Derek to open his garden to our Society and I should like to thank him for sharing his plants and his knowledge and for entertaining us all so royally.

As a general summary I should like to thank everyone who arranges and attends these south-west meetings, I find them very rewarding and always return to my own garden invigorated and encouraged. We are always pleased to welcome new members and friends, so please contact me if you are likely to be, or live in, south-west England next year.

NATIONAL FIELD MEETINGS 1986

NORTH YORKSHIRE — 6-8 June. If you want to attract a large enthusiastic crowd to a BPS meeting you don't choose York as your centre and you certainly don't advertise *Pilularia* as the star attraction. Well ... we did, and we didn't draw a crowd, but the small gathering that set out this weekend in June was a jolly crew who enjoyed two days of good natural history in some of the better bits of North Yorkshire.

We first gathered at the John Bull on Friday for introductions, planning, and to sink a few pints of Timothy Taylor's fine "Landlord" bitter. Nev Hobson who runs the place is just beginning an interest in ferns with a few specimens already improving the beer garden, and he expressed a desire to join us, but, true to the form we know of old, he failed to turn up the next day ... however, two members from Hertfordshire did.

Jack Bouckley and I were the appointed leaders and we took a day each. On the Saturday we met at Skipwith Common, a local nature reserve just south of York, with ponds, marshes, and heathland over sand and acid peat. *Pilularia* has been known there for many years. Robinson, inhis Flora of The East Riding of Yorkshire (1902) recorded that it was found: "formerly in ponds now cleared away.Discovered again in abundance in other ponds, Oct. 1901". It is not in any of those ponds today, but a new colony has been found in a hole in one of the wartime air-base runways, a hole which has matured into a pond so well that its origin is now totally obscured by the rich vegetation. This superb small pond has muddy sloping banks upon which up to an acre of *Pilularia* grows, at present submerged, later to be seen as an extensive sward as the water level drops during the summer. The party, consisting of five members and six visitors, was able to dip into the water and recover long, new growths of rhizome with young fronds and croziers emerging energetically from last year's plants which still bore empty or full, but rotton, sporocarps.

The hunters, having now met the weekend's quarry, set off to seek it in new places. As we left the common we saw the ferns that one might expect, large stands of Bracken (one area set aside for the bracken/invertebrate interaction researches of Prof. John Lawton of the University of York) and *Dryopteris filix-mas, D. dilatata, D. carthusiana, Athyrium filix-femina,* and two plants of the locally-uncommon *Oreopteris limbosperma* where previously there had been only one. As in July 1974 (Bulletin, 1975 vol. 1, no. 3, p. 91) we visited an area of birch scrub just outside the reserve boundary, next to the pig farm. Here pine woodland with abundant *D. dilatata* meets birch marshland with *D. carthusiana.* It seemed impossible to refind the plants seen on our previous visit for the increased growth had changed the site out of all recognition. However, perseverance paid off and we rediscovered the swarm of the hybrid *D. x deweveri* with the two parents mentioned above, though we could only be certain what was what after a wide-ranging search had secured for us good parental samples. We hurriedly left this site for the mosquitoes were devouring our be-shorted visitors, who were too busy swatting the pests with their specimen fronds to appreciate the finer points of pteridophyte breeding. A short distraction was caused by the discovery of some stink-horn eggs (the uninflated fruiting bodies of that vile fungas *Phallus impudicus*) which one of the party offered round as food, considered by some to be good!

Next we visited a pair of old brick pits just to the north of Howden, interesting ponds indeed, but sadly unsuitable for *Pilularia.* One of the younger members of the party fell in and was fortunate to be reclothed by another who happened to be carrying a bag of clothes due at a jumble sale! So to a pub lunch, forgetting to check the *Gymnocarpium robertianum* at Foggathorpe station (Bulletin, 1975, vol. 1, pt. 3, p. 91; Pteridologist, 1984, vol. 1, pt. 1, p. 9) for we had loftier ambitions.

The afternoon was spent at Gormire, a lake at the base of the great cliff of Sutton Bank on the western edge of the north Yorkshire moors, in the YWT reserve of Garbutts Wood. *Pilularia* had been recorded here several times, frequently by reliable pteridologists, but has not yet been found by us, or Clive Jermy who suggested the *Pilularia* hunt. This peaceful lake, bounded on three sides by wooded hillsides, is clear with a fine white sand bottom where *Lobelia dortmanna* and *Ceratophyllum* sp. thrive. The surface waters are interrupted at the margins by rafts of flowering *Menyanthes trifolia* (Bogbean) and fine stands of *Eleocharis palustris, Carex rostrata,* and *Equisetum fluviatile,* the horsetail being in full spore production. We first looked at the floating bog at the southern end of Gormire, made of *Sphagnum squarrosum, Potentilla palustris, Mentha aquatica,* etc. bound by creeping grasses. Here we were able to see some of the *Pilularia* indicator species: *Acrocladium cuspidatum* (a moss); *Apium inundatum,* a fine-leaved, totally submerged member of the Umbelliferae; and *Lysimachia thyrsifolia,* the Yellow Loosestrife.

On his previous visit earlier this year, Clive had been convinced that the floating bog in the north-eastern corner was perfect for *Pilularia,* but on that occasion had failed to find it. Despite a most inspiring session on that fabulous bog the BPS party failed again. In the woods, for the record, we found *D. filix-mas, D. dilatata, D. affinis ssp. borreri, A. filix-femina, O. limbosperma, P. aquilinum,* (indeed all of those six in one square metre at one place), and *Blechnum spicant.* We were, of course, disappointed with our failure but left in good spirits for one of our number discovered a small patch of robust *Ophioglossum vulgatum* right next to where we had come in! Probably not a new record but significant in its continued presence.

Sunday was Jack's day and we met up, stronger by four more hunters, north of Ripon in order to visit a complex of ponds known locally as "Dubs". Their origin is in doubt but suggestions of monastic fish-ponds, gypsum quarries, and subsidence gave plenty of material for speculation. Today their function is (again?) as fish-ponds for the anglers of Bradford. The water supports a good deal of wildlife from Great Crested Grebes to *Schoenoplectus lacustris* (the true Bulrush) and *Ranunculus peltatus* (and huge leeches). However, its banks are steep, the water is very rich in nutrients, presumably leached fertiliser. It was murky and algal, a contrast with Gormire, and no fit place for the Pillwort. We briefly turned our attention to the sedges finding *Carex vesicaria* a pleasant addition to the previous day's *C. rostrata,* a close relative.

After lunch at a rotten pub the next site was heart-breaking. Jack had checked out some brick pits on Hutton Moor some three weeks previously and considered them worth a visit. The land-owner had drained them and we arrived to find a morass of grey mud and scattered dead trees. We left immediately and headed for Brimham Rocks to try and recover our shattered morale.

Brimham Rocks is a trap for local tourists consisting of a collection of gigantic blocks of millstone grit, fantastically sculpted by 100,000 years of post-glacial Yorkshire weather. In the hollows thereabouts are sphagnum bogs, moors, and woods where all the expected species of fern may be found. One of our party had heard a rumour that *Thelypteris palustris* was to be found at Brimham and we set off to find it, but it must have been an error of identification or locality, for the acidic cotton-grass bogs there would be most unsuitable for the marsh fern. Before taking a consolatory ice-cream we recorded *D. filix-mas, D. affinis ssp. borreri, D. dilatata, A. filix-femina, P. aquilinum* and *B. spicant.*

The next site was a splendid nature reserve with tea-room in the heart of urban Harrowgate: the Bouckley household where Jack and his wife treated us to a tour of the garden and greenhouses full of ferns and alpines in excellent condition, followed by tea and cakes. The tea was an excellent and very welcome end to a most enjoyable weekend characterised by the presence of some new faces from the university of York, with their tricky questions (they stand little chance of avoiding membership!) and Jack's infectious hearty good humour which kept us laughing throughout.

J Merryweather

YORKSHIRE — 10 June. Tuesday, 10 June was one of those days. If there had been enough interest, we would have arranged something. However, as it turned out I had the day and the sites to myself. Three stretches of water called Hall Garth Ponds were searched and then another large lake on the Norton Conyers estate, the home of Lady Graham who had given me permission to enter this strictly private area. No sign at all of the Pillwort, even though there are old records of it having been seen around the Hutton Moor area which is to the North East of Ripon. I do not know how old the record is. An extremely violent hail storm stopped play for the day.

On Wednesday, 11 June eight of us met at Strensill Camp, about seven miles NNE of York, after being assured by the Army authorities that there would be no firing on the area while we were there. We had been told that the plant we were looking for was, many years ago, growing on an old tank practice track on this W.D. owned part of Strensill Common, which is mainly quite a wet area. During the morning we explored some tank track and marsh land covered with tussocks of grasses, sedges and rushes all surrounded with water of varying depths. Many interesting plants were seen including *Eleocharis multicaulis, Eriophorum angustifolium, E. vaginatum* and *a very large stand of Drosera rotundifolia* (Sundew), but no pteridophytes.

After refreshments at the local pub it was decided that we should move to the southern part of the common, so together with three more members we set off over similar terrain, but it did seem to be a bit more promising as we found *Dryopteris carthusiana, Equisetum palustre* and *E. arvense.* There were quite a number of cranberries *(Vaccinium oxyoccus)* and also *Salix repens.* After searching for about an hour we came across another tank track, wetter than the one we had worked in the morning, which we continued along. It was about 4.00 pm when Clive Jermy spotted what we had spent four days looking for: a large area of *Pilularia globulifera,* some growing actually in water and some above the water level. It certainly was a marvellous sight and it was not long before Clive had obtained a specimen of the water etc. and had found a convenient mount on which to sit while he made out the long report which is needed for this project. This find certainly made the weekend well worth while.

As a matter of interest the counties of West, South and North Yorkshire cover a total of 2,857,982 acres and the two areas of *Pillwort* we found extend over probably a quarter of an acre. Let us hope that more will be found in the near future.

Jack Bouckley

BETWS-Y-COED, 15 - 16 AUGUST. Two days of fine weather were spent by a (disappointingly) small group of members in the vicinity of Betws-y-Coed. I had taken over the leadership of the meeting when the originally planned leader was unable to attend and as a result, I had to hurriedly put together a programme based on my limited personal knowledge, people's suggestions and the map. Fortunately, it turned out well and we had two good days of interesting sites.

We began on Saturday morning by visiting a small wood near Llanrwst (NGR 23/810614). We parked the cars by the main road and walked up a track towards the wood. *Asplenium ruta-muraria* was seen on the cemetery wall, with *Dryopteris filix-mas* and *Polypodium interjectum.* The path entered the wood along a gulley which provided a sheltered position for many ferns. *Polystichum setiferum, Athyrium filix-femina, Blechnum spicant, Asplenium scolopendrium* and *D. dilatata* were all seen. In addition, we found *D. affinis* subsp. *affinis* and *D. a.* subsp. *borreri* growing together in some quantity and were able to compare them and clearly see the differences between them.

Our next stop was at Gwydir Castle, nearby (NGR 23/795610). We walked along the road where the bank rose steeply into woodland. Here we found most of the species found earlier and in addition, *Asplenium trichomanes* subsp. *quadrivalens, A. adiantum-nigrum* and *A. ceterach.* On the bank, a crested *Athyrium filix-femina* was found. Through the castle gates, we spotted a fine stand of *Osmunda regalis,* in perfect harmony with the many peacocks strutting around the grounds, for which the castle is famous.

Our final stop before lunch was to examine the woods near Dolgarrog (NGR 23/773662). This proved relatively unexciting with large quantities of primarily *Dryopteris dilatata, D. affinis* subsp. *affinis* and *D. a.* subsp. *borreri,* although we did add *Cystopteris fragilis* to our list.

After lunch, we visited Llyn Crafnant. Having left the cars at the car park to the north-east (NGR 23/756618), we walked down the road which follows the south-eastern side of the lake. *Asplenium trichomanes* subsp. *quadrivalens* was found on a wall and *A. adiantum-nigrum* in the ditch beside the road, including several very large plants. However, the most common ferns along this road were *Oreopteris limbosperma, Dryopteris affinis* subsp. *affinis* and *D. a.* subsp. *borreri.* We had received a report of *Dryopteris* hybrids on the slopes of the Cwm, and accordingly left the path to examine the scree slopes above. There was little but *O. limbosperma* and some *Phegopteris connectilis,* although we did find a few plants of *D. affinis* subsp. *stilluppensis,* which was probably the origin of the hybrid reports, looking, as it does, very intermediate between *D. a.* subsp. *affinis* and *D. oreades.* We circled round and back down to the reservoir, in the hope of finding *Pilularia* but were unsuccessful. We continued back along the north-western side of the reservoir and found some large *Isoetes* washed up at the water's edge.

On Sunday, we travelled to Llyn Idwal (NGR 23/6459). We followed the usual low-level path, which encircles the lake, via the scree below Devil's Kitchen. Our efforts were rewarded with a good list of ferns and lycopods: *Oreopteris limbosperma, Athyrium filix-femina, Blechnum spicant, Phegopteris connectilis, Dryopteris dilatata, Cystopteris fragilis, Cryptogramma crispa, Asplenium viride, A. trichomanes, Gymnocarpium dryopteris, Polypodium* sp., *Huperzia selago, Lycopodium clavatum, Diphastrum alpinunum* and *Selaginella selaginoides.*

After lunch, we paid a visit to Cwm Grianog (NGR 23/630632), the classical *Dryopteris affinis* site. Here we found a little *D. a.* subsp. *borreri* on the lower slopes but plentiful *D. a.* subsp. *affinis, D. a.* subsp. *stilluppensis* and *D. oreades* on the boulder screes a few feet above. Unfortunately, the fronds of many of the plants had been badly damaged by sheep grazing, especially the *D. oreades.* However, we were able to compare the three *Dryopteris affinis* subspecies. In addition to the *Dryopteris affinis* we also saw *Phegopteris connectilis, Polypodium interjectum, Oreopteris limbosperma, Athyrium filix-femina, Asplenium trichomanes* (including one exceptionally large, crinkly plant) and *Hymenophyllum wilsonii.*

Overall, a very successful two-day meeting.

Anthony Pigott

FERN GARDENS, PAST AND PRESENT — 12-14 September. Inevitably, with such an intriguing title, this meeting attracted so much interest that the leader, Martin Rickard, had been warned that fifty members might attend. Mercifully, only thirty-five members assembled in Usk, Gwent, a more manageable number. It was pleasing to see Judith and Clifford Jones from Seattle, U.S.A. and members had the opportunity to discuss fern growing with Judith as an enthusiast from the other side of the Atlantic.

It was obvious from the start that this was going to be a weekend for gardeners' weekend and there was much speculation in the lounge of the Three Salmons Hotel that first evening as to what we might see over the next two days. Once again, Martin's excellent abilities as an organiser were demonstrated, as he had prepared an itinerary for the weekend giving grid references and travelling directions for sites to be visited with names and telephone numbers of land-owners in case of problems.

At 9.45 am, our cavalcade of cars moved off to visit the garden of Mr & Mrs Bird at Dennel Hill near Chepstow. On arrival, Martin explained that Major Cowburn had lived here until his death in 1892 at only forty-three years of age. The Major had only begun growing ferns in the spring of 1888, yet in that short time he had successfully built up a large fern collection. He acquired part of the Fox collection, and had the singular good fortune to find eighteen plants of *Asplenium scolopendrium* 'Crispum' growing wild on the estate of Dennel Hill.

Martin then led us around the garden and we saw several ferns at the base of a retaining wall. Amongst the usual forms of soft shield fern were varieties in the Divisilobum group including a superb plumose 'Multilobum', together with harts-tongue and maidenhair spleenwort. In a somewhat neglected rockery under a canopy of oak an beech trees, we found more soft shield fern varieties including 'Divisilobum Cristatum' and 'Divisilobum Ramosopinnatum' together with a very large *Dryopteris filix-mas* 'Decomposita' and several *Dryopteris dilatata.* Many of the larger stones were covered with *Polypodium interjectum* with one or two fronds showing a tendency to serration. It is fascinating to note that the soft shield ferns have survived neglect have for nearly one hundred years surely an indication that this area of the country would be an ideal situation for the national collection of *Polystichum setiferum.* Dennel Hill sits upon the high watershed that is formed by the close proximity of the rivers Wye and Severn. The River Wye could be seen below a steep wooded slope and several of the party clambered down to examine more varieties of *Polystichum setiferum,* mainly 'Ramosopinnatum'.

After some photography and a little spore collecting, the party moved off to the North Gate Inn near Caerwent for lunch. The rain which had been forecast now arrived but it did not deter several members from exploring the remains of the ancient Roman town of Caerwent. It also gave us the opportunity to observe the fern flora of the walls, seeing an abundance of *Asplenium ceterach* and *A. trichomanes* with lesser quantities of *A. ruta-muraria, A. scolopendrium* and, most notably *Polypodium australe.*

The party then moved off to visit the garden of Mr & Mrs W Kathrens at Dewstow House, Caldicot, which was originally laid down by a Mr Oakley early this century. Martin had asked members to bring torches and they were to prove essential here. I am sure none of us were quite prepared for what we were about to see. Arriving at the front of the house, Martin led the party to a corner by the drive and we all promptly disappeared into a bramble-hidden cavity which proved to be the entrance to a large underground 'cavern' which looked natural but was in fact lined with artificial stone.

The 'cavern' was about six feet high by five to six feet wide, and meandered for some thirty yards with many side passages. Members explored first this way, then that, encouraged by the light from their torches. Two or three small vents up to the surface could be seen but they were far too small to allow any appreciable light in. There was much speculation as to the cavern's functions for there was far too little light available for the growing of plants or ferns. The exit at the other end led to a series of rock pools surrounded by some elaborate stonework. Here one or two ferns were seen but only commonplace species such as lady fern, male fern and broad buckler fern.

Returning to the side of the house, Martin led us down steps into yet another pitch black underground cavern some eight yards long and two to three feet wide with side chambers, which eventually opened into an amazing ferny grotto with classic pillars of tufa stone with pockets fashioned out for plants. The floor of the grotto was dissected by a system of pools. The entire grotto was glazed at soil level with quarter inch plate glass, now badly damaged and neglected, although plans are in hand to repair it. In spite of this, (or indeed because of this as the damaged glass allowed torrents of rain water to cascade on to us and the plants) many ferns continued to flourish, amongst them maidenhair spleenwort and harts-tongue fern. Beyond this grotto, a dark passage led into another grotto but a total collapse of the roof prevented us from exploring this area.

Further from the house, we found yet another entrance formed by a most attractive rockery between which a path of limestone stonework was raised above a small stream giving the impression of a narrow limestone pavement. In this grotto, more ferns persisted mainly those already mentioned but with the addition of very nice plants of *Polystichum tsus-sinense, Cyrtomium caryotideum* and *Pteris* cultivars. Again, time had taken its toll on the glazed roof, allowing the rain to overfill the pools and streams which were thick with *Elodea canadensis.* The cascade of water made photography difficult.

By mid-afternoon it was time to leave this remarkable garden (but not before a very careful head count had been taken in case anyone was still lost in one of the tunnels) and move on to the last garden of the day at Shirenewton, near Chepstow. Our visit to Shirenewton Hall was very much a return pilgrimage to the garden of Britain's foremost Victorian fern grower, Edward Joseph Lowe, raiser of fern varieties and writer of fern books. We last visited Shirenewton Hall in 1979, (Bulletin Vol. 2, page 12) when it was the home of Mr & Mrs Hayward. Now it is in the care of Mr & Mrs Knight by whose kind permission we were able to return.

It was a cold, wet and somewhat bedraggled party that arrived on Mr & Mrs Knight's doorstep looking like refugees from a natural disaster, but our spirits were soon raised when we were invited in to the house for a cup of tea. After divesting ourselves of waterproofs, wellingtons or boots we marched through their magnificent home into the large kitchen where very welcome refreshments were provided; soon the kitchen walls reflected our beaming smiles. Over tea, I was invited to explain to the group and our hosts the importance of E J Lowe, putting our visit to the pteridologically famous site in perspective.

Feeling a good deal warmer and a little dryer, we made our way into the garden to see the many fern varieties that have survived the eighty-six years since Lowe's death. Near the drive to the house were several *Polystichum setiferum* varieties, one or two after the style of *P. setiferum* 'Wakleyanum', and another curious form with revolved pinnae. These, together with some *Dryopteris filix-mas, Athyrium filix-femina* and *Polypodium interjectum* were the only ferns close to the house.

We then moved on to the Japanese garden developed by the Liddells, owners of Shirenewton Hall between Lowe and the Haywards. The garden is on the site of a coal pit dug early in the 19th century. In Lowe's time this pit was planted with ferns as a feature, so some of the larger plants here are quite possibly Lowe's own plantings. The rain was now even more persistent and although some photography was attempted, most members restricted themselves to just enjoying the garden and collecting occasional pinnae for spores in the hope of raising something from Lowe's old garden to enhance their own collections.

Mr & Mrs Knight then joined us for a crash course on ferns and fern growing and it was reassuring to know that the remains of Mr Lowe's fern collection is in caring hands. By 5 pm the light was quickly fading and most of us had had enough of this very wet afternoon. We all thanked Mr & Mrs Knight for their uncommon kindness and hospitality and made our way back to Usk to dry our clothes and equipment.

After dinner, there was much discussion in the hotel lounge about all that we had seen during the day. As an item of interest, Ray Smith had brought along a pressed frond of a very attractive *Polystichum setiferum* 'Cristata-Congesta' which he had raised from spores collected on our previous visit to Shirenewton Hall in 1979.

Sunday arrived with the promise of better weather and as we walked to our first garden of the day, large areas of low cloud were giving way to ever increasing patches of blue sky. Our visit to the garden at Usk Castle was by kind permission of the owner, Mrs R H Humphreys, and was something of another pilgrimage. Martin explained that a close neighbour to this garden was Mr W Carbonell, a well-known fern grower and contemporary of E J Lowe.

The remains of the castle keep towers above the town, with white doves and black jackdaws winging their way in and out of the cavities in the masonry. Although privately owned, this is a 'real' castle with its own special atmosphere and centuries of history for it is the birthplace of two English Kings: Edward IV and Richard III.

Most of the Castle towers and defences are capped with thick colonies of *Polypodium australe*. The garden is most attractive, with many mature trees and shrubby areas giving way to herbaceous borders and annual bedding. Several forms of the soft shield fern were found, notably *Polystichum setiferum* 'Divisilobum Longipinnatum' and *P.s.* 'Divisilobum Grandiceps'! although probably not good enough to be Carbonell's original form. Other *Polystichum* varieties included *P. setiferum* form approaching 'Wakleyanum' and possibly *P. aculeatum* 'Hybridum'. This last variety was raised by Carbonell and Lowe as proof of hybridisation in ferns. Several bulbiferous 'Multilobum' were scattered around as well as some candidates for 'Conspiculobum'. A single muriate harts-tongue survived along with a small plant of 'Crispum'.

All Carbonell's ferns were given to Kew on his death making the Kew collection enormous in 1895 (586 varieties). Sadly, by 1906 this had dropped to abut 380, and now very few remain at Kew. Fortunately, some 20 still survive at Usk. Such was the attraction of this 'garden in a castle' that after exploring only part of it, we were well behind schedule.

Our next call was to Mr & Mrs Glynne Clay's garden at Lower House farm, Nantyderry. This had an attractive mixture of shrubs and herbaceous plants with the emphasis on herbs. Her recent interest in ferns was apparent on a short walk in the garden. In a wooded area where a stream divided, only to rejoin a few yards further on, Mrs Clay had planted her 'fern island' with *Osmunda regalis, Onoclea sensibilis, Blechnum* *spicant, B. penna-marina* and *B. chilense.* There were also some good varieties, notably a very fine *Polystichum setiferum* in the 'Wakleyanum' mould. Amongst the many British ferns *Dryopteris cystolepidota* (like *D. erythrosora* but without the red sori) and several other hardy foreign species were planted. It was with much regret that we had to say goodbye to Mrs Clay and her lovely garden, but time was pressing and we quickly moved on to have lunch at the Rising Sun at Pandy. After lunch we all assembled at Abbey Dore Court garden and nursery, home of Mrs Charis Ward.

A tour of her private garden alongside the River Dore revealed many British fern varieties which Martin Rickard is in the process of naming and labelling. Many of the varieties here were raised by Lt.Col. Philip Coke when he resided in the area, including many heavily crested and capitate forms of lady fern which are thriving. After touring the garden the party descended on the nursery where brisk business was done, and after taking advantage of the refreshments provided at the nursery we thanked Mrs Ward and moved on for our final visit, to 'Whitfield' near Wormbridge, home of Mr George Clive.

Whitfield is a large country house set in spacious grounds. Built in 1750, it has belonged to the Clive family since 1796. To the north of the house is a series of lakes surrounded by mature trees, many very uncommon in Britain. It is under these trees that our host has developed a woodland garden including many ferns in association with lilies and *Mecanopsis* species. There was a fine *Dryopteris erythrosora* and a good plant of the uncommon *Polystichum setiferum* 'Acutilobum'. From the woodland garden our party walked some four hundred yards to some magnificent redwoods, planted in 1851, probably one of the best developed plantations of its kind in the country. We speculated on which ferns would make suitable ground cover and this is where our American member, Judith suitable ground cover and this is where our American member, Judith Jones came into her own. Apparently *Polystichum munitum* would be most appropriate but some *Adiantum pedatum* would also be in keeping. From the plantation we moved back along the south side of the house past *Matteuccia struthiopteris* and *Osmunda regalis* growing in an ornate fountain brought from Essex in 1969. In the walled garden we saw *Pteris cretica* growing in a sheltered spot outside and *Adiantum capillus-veneris* colonising the walls on the inside of the greenhouses. Sadly the *Dicksonia antarctica* died in the severe winter three or four years ago, but its stump remains!

On moving back to the house our party was very kindly entertained to wine, cakes and biscuits in the library of Whitfield. This made a fitting end to a most enjoyable weekend, and our thanks are due to Mr George Clive and indeed all our hosts for their hospitality in letting the B.P.S. descend on each of their fascinating gardens.

Finally, a very big thank you is due to Martin Rickard for taking the trouble to research and make available to us all the facts about our fern growing predecessors and for providing us with a truly marvellous weekend.

A R Busby

SOUTHPORT FLOWER SHOW — 22-24 AUGUST 1986

A R Busby

A further indication of the state of flux Southport Flower Show finds itself in was the change of dates which was notified to the Society in January 1986, hence the apparent error in the Society's Meetings Programme. The change to Friday, Saturday and Sunday is an attempt to attract more holiday-makers through the turn-stiles. Certainly this year's show attracted a good attendance but whether that was due to the change of dates or because the show happily coincided with a spell of relatively good weather is debatable.

The relatively wet, cool summer produced ferns of quality for the competitive classes. My comments last year concerning the need for careful reading of the show schedule had obviously been taken to heart with only one disqualification of an exhibiti for not being according to schedule this year. It was particularly pleasing to see one or two new names amongst the competitors.

This year's judges were Mrs H M D Key and A R Busby.

The prize winners are listed in order of winning.

Class 7	Six hardy British ferns (Dissimilar) W Kirby, (no first awarded) (two entries)
Class 8	Six greenhouse ferns (Dissimilar) B Russ, M R Little (two entries)
Class 9	Three hardy British ferns (species not varieties) R J Smith, B Russ (two entries)
Class 10	Three foreign ferns (Hardy in Great Britain) B Russ, W Kirby (no second) (two entries)
Class 11	Three *Phyllitis scolopendrium (*now *Asplenium scolopendrium)* (Three distinct varieties) B Russ, W Kirby (two entries)
Class 12	Three Polypodiums (Three distinct varieties) W Kirby, R J Smith (two entries)
Class 13	Three Polystichums (three distinct varieties) B Russ, W Kirby (? entries) (no first awarded)
Class 14	Three Athyriums (Three distinct varieties) B Russ, W Kirby (two entries)
Class 15	Three Dryopteris (Three distinct varieties) R J Smith, W Kirby (three entries)
Class 16	Three Aspleniums (excluding *Asplenium scolopendrium*) (Three distinct varieties and/or species) B Russ, W Kirby (two entries)
Class 17	One British fern (any kind or variety) R J Smith, B Russ, W Kirby (three entries)
Class 18	One greenhouse fern F A Hunt, Mrs E A Gibbs, R J Smith (five entries)

The Silver Perpetual Challenge Trophy, awarded to the exhibitor who accumulates the most points, was won by Mr Brian Russ of Ormskirk.

Members visit Mrs Clay's 'Fern Island' Photo: A R Busby

OBITUARY

HARRY PRIEST, 1914-1986

West Midland members were saddened to learn of the death of Harry Priest on the 27th May. Harry joined the Society in 1980 having developed an interest in growing ferns after a life-long passion for cacti and succulents. In the short time we knew him, he proved to be a very knowledgeable gardener in spite of being dogged by poor health. It is very much regretted that we did not meet Harry sooner and have been enable to enjoy our mutual interest longer.

Our most sincere condolences to his wife Ann.

A R Busby

NEW MEMBERS 1986

(The full list of members was published in Vol. 3, part 2).

ADAM Susan, 7 Constance Road, Sutton, Surrey SM1 4QG
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WARREN Mr J, c/o Biology Dept. University of York, Heslington, York

MEETINGS PROGRAMME 1987

Meetings Secretary: Marion Fyfe, Perlfan Maf, 4 Tai Rhos, Llangaffo Road, Gaerwen, Gwynedd LL60 6LN

Meetings Committee: M Fyfe, A R Busby, M H Rickard, J R Woodhams

Saturday 14 March	Annual General Meeting at the National Museum of Wales, Cathays Park, Cardiff at 14.00 hrs. Speaker: I K Morgan on 'Welsh Ferns'.
Saturday 9 May	Visit to the Royal Botanic Gardens, Kew Meeting at the Lower Nursery which is adjacent to Kew Palace at 14.30 hrs. Leader J R Woodhams.
Saturday 20 June	Visit to University of Hull Botanic Garden and Mrs J K Marston's Nursery at Nafferton, E. Yorks. Meet outside Botanic Garden at 57 Thwaite Street, Hull at 09.45 hrs. Leader: A R Busby.
Saturday/Sunday 18-19 July	Weekend meeting in Derbyshire. Leaders: Dr Alan Willmot and Dr N Hards.
Saturday/Sunday 1- 2 August	Weekend meeting in Somerset. Leaders: Christopher and Mary Potts.
Saturday/Sunday 15-16 August	Visit to Harlow Car Gardens. Meet in the 'Members Room' at 10.00 hrs. Leader: J Bouckley.
Saturday/Sunday 22-23 August	Dryopteris Study Weekend in the West Country. Leader: Hugh Corley.
Friday/Saturday/Sunday 21, 22 & 23 August	Southport Flower Show. Competitive fern classes. Society's stand in tent No. 2. Leader: A R Busby.
Saturday 17 October	Autumn Indoor Meeting at the South London Botanical Institute. Speaker: Pamela Schwerdt, 'Sissinghurst'. Meet at 14.30 hrs. Leader: P Ripley.

For full details of all these meetings and available accommodation please consult your Meetings Programme sheet.

REGIONAL DAY MEETINGS

If you would like details of additional day meetings in the following areas, please contact the local organiser, enclosing a stamped-addressed envelope.

South-west England: Christopher and Mary Potts, 4 Kennel Lane, Webbington, nr Axbridge, Somerset. Tel: 093 472 545.

West Midlands: A R Busby, 16 Kirby Corner Road, Canley, Coventry, CV4 8GD. Tel: 715690.

North-east England: J Bouckley, 209 Woodfield Road, Harrogate, N. Yorks., HG1 4JE.

South-east England: P Ripley, 12 Farm Lane, Tonbridge, Kent, TN10 3DG.

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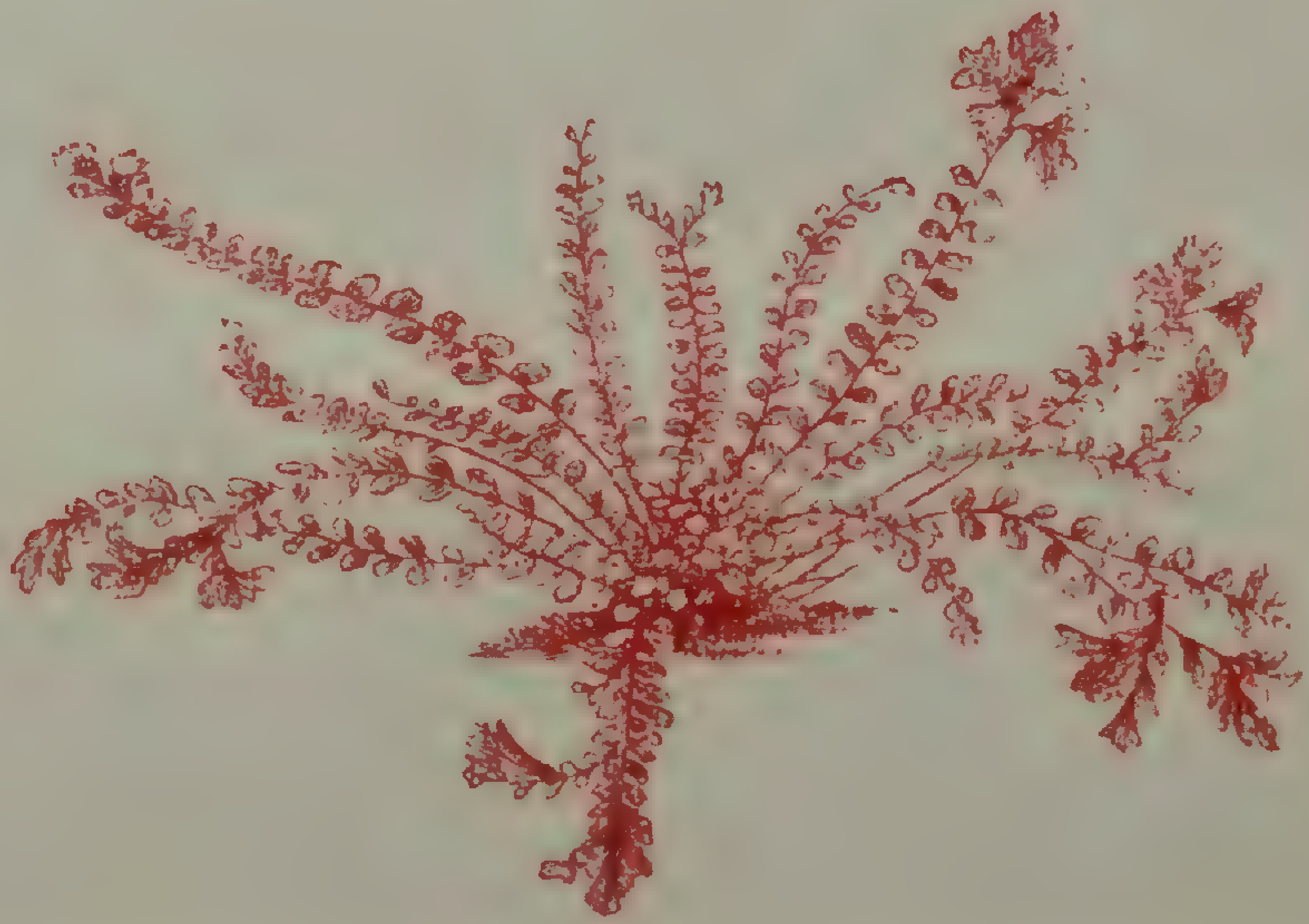

Edited by A.R. Busby
and A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY

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Trustees of Greenfield Fund: G. Tonge, A.R. Busby, Dr B.A. Thomas

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges and a spore exchange scheme. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin*, are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist*, topics of more general appeal, and the *Bulletin*, Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £10, Personal Members not receiving the *Fern Gazette* £7.50; Student Members £5; Subscribing Institutions £12. Family membership in any category is an additional £2. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £1.50 extra to cover bank conversion charges). Airmail postage for all journals - an extra £3.50, or for those not receiving the *Fern Gazette* £2.50.

(Front cover, *Asplenium trichomanes* 'Cristatum').

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

THE

BULLETIN

OF THE

BRITISH PTERIDOLOGICAL SOCIETY

Vol. 3 1987 No. 4

SECRETARIAL NOTES

MEETINGS CARDS — Meetings cards for 1988 are enclosed with this Bulletin to all inland members. Overseas members visiting Britain can obtain them on application to the Meetings Secretary.

COMMITTEE VACANCIES — In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1988. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 1 March 1988.

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SUBSCRIPTIONS 1988 — Members are reminded that subscriptions for 1988 are due on the 1st January 1988 and should be paid to the Assistant Secretary (Membership), British Pteridological Society, c/o Dept. of Botany, British Museum (Natural History), Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL — Our journals can be sent by airmail to overseas members, provided they advise the Assistant Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

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AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY — Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. Due to major changes concerning privileges for affiliated societies the free tickets for the Chelsea Show have been withdrawn. There are two transferable tickets available for all other RHS Shows. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE — The American Fern Journal, a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND — This fund, set up as a memorial to one of our Society's great fern growers — Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when

MISSOURI BOTANICAL
MAR 1 1988
GARDEN LIBRARY

decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

BINDERS for the BPS BULLETIN — Binders for volumes of the BPS BULLETIN are available from the General Secretary. Attractively produced with red hardboard covers and gold blocked lettering on the spine: only £3.50 each, postage & packing included. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby.

SPORE EXCHANGE SCHEME — Change of Organiser — After fourteen years' diligent work, Mr R F Cartwright has notified the Committee that he intends to retire as Spore Exchange Organiser. It is entirely due to his efforts that the scheme has proved so successful. Mrs Margaret Nimmo-Smith agreed to take over the running of the scheme from 1st September 1987. All applications for spores together with a stamped, addressed envelope should be sent to Margaret's address which is 201 Chesterton Road, Cambridge, CB4 1AH. Please remember that it is an exchange scheme and donations of spores, especially of named hardy British ferns and cultivars are gratefully received.

BACK NUMBERS OF JOURNALS — Back numbers of our journals are now being handled by Mr P J Acock. It is proposed that while stocks last the Society will try to ensure that those who would like to purchase back numbers of the Fern Gazette, Bulletin and Pteridologist should be encouraged to do so. As the stocks are depleted, because of the rising cost of printing, and storage problems, a service of photocopying articles will be provided. Stocks will not be depleted overnight but some early volumes are running low. If you are considering buying back numbers there has never been a better time to buy them than at present. Please send a stamped, addressed foolscap envelope for a detailed breakdown of costs to Patrick J Acock, 13 Star Lane, St Mary Cray, Kent, BR5 3LJ England.

C.A.B.S./F.F.P.S. SYMPOSIUM

Conservation Association of Botanical Societies/Fauna and Flora Preservation Society.

The C.A.B.S./F.F.P.S. symposium on "Is Nature Conservation Working For Plants?" is to be held at the Zoological Society of London's Meeting Room, Regent's Park, London on Saturday 5 March. Further details and booking forms are obtainable from F.F.P.S., 8-12 Camden High Street, London, NW1 4RY.

B.P.S. PLANT EXCHANGE SCHEME

1987 was a fairly successful year for the scheme, with both a spring and autumn list sent out. This year there will be only one list, hopefully issued in late spring/early summer.

Overseas members may be included on the new list on the understanding that anyone wishing to import/export live plant material becomes entirely responsible for making themselves aware of the regulations which apply to the country concerned. Further information for U.K. members will be included on the 1988 list.

To enable the Plant Exchange to continue as a viable proposition, offers of surplus plants are desperately needed for the new list. I am very grateful to all those who have supplied plants in the past year, and would be glad to hear from all members who can offer even just a few ferns.

Packaging need only be simple and for small plants, cheap. One method is to wash the roots free of excess soil, wrap in wet tissues, place in a plastic bag, seal and put in a rigid container and envelope for posting. One enterprising member sent me two ferns in a wedding-cake box, easily posted for only 18p!

Rosemary Hibbs

ANNUAL GENERAL MEETING 1987

MINUTES of the 84th ANNUAL GENERAL MEETING held at the National Museum of Wales, Cathays Park, Cardiff on Saturday 14 March 1987 at 2.15 pm.

IN THE CHAIR: The President, Mrs Gwladys Tonge.

PRESENT: P J Acock, A R Busby, J M Camus, Mr & Mrs R Coughlin, J A Crabbe, C D Fraser-Jenkins, C R Fraser-Jenkins, Dr D Galloway, Dr M Gibby, R Hibbs, A Hill, D Holly, Dr G Hutchinson, J Ide, C Kelly, A Ogden, A M Paul, A C Pigott, C J & A G Piggott, Dr N Quansah, M H Rickard, P Ripley, Dr B A Thomas, J R Woodhams.

ITEM 1 — APOLOGIES FOR ABSENCE — J W Dyce, A C Jermy, R P H Lamb, Dr B S Parris, Dr A Willmot.

ITEM 2 — MINUTES OF THE ANNUAL GENERAL MEETING held on 8 March 1986 were read and approved.

ITEM 3 — MATTERS ARISING from those minutes — None.

ITEM 4 — HONORARY GENERAL SECRETARY'S REPORT — Once again I am charged with the task of reporting to the membership the Society's 'state of affairs', a task I always find difficult — how can you convey in a paragraph or two all the Society's activities both major and minor?

Membership and subscriptions
The major item facing all members at the end of 1986 was the subscription increase. Such increases usually result in a flood of resignations and this is always regretted, however, this time resignations so far received appear to be fewer in number. Anthony Pigott kindly supplied the following membership figures which were correct on the 31 December 1986: 8 Family, 9 Honorary, 529 Full and Optional, 22 Student, 107 Subscriber, a grand total of 675.

As in previous years, it must be emphasised that the figures are only a guide as there are still some 45 members in arrears. May I take this opportunity to remind members that with the increase in subscriptions payable from the 1 January 1987, bankers standing orders will need to be revised.

Meetings
Members attending meetings were fewer in number during 1986, again most attending being the same old faces but we were pleased to be able to meet some new members.

Publications
I often receive comments from members about how much they have enjoyed the Society's journals and the editors of the 'Fern Gazette' and the 'Pteridologist' are to be congratulated on producing such interesting publications. I regret that the 'Bulletin' was delayed in its distribution due to problems at the printers and a hiccup in one or two of the Society's enclosures.

Conservation

The Fern Varieties Conservation Sub-Committee met during the summer and it has become clear that our Society must form closer ties with the National Council for the Conservation of Plants and Gardens. The conservation of fern varieties is a major feature of our Society's interests.

Of course we do not ignore the conservation of British fern species and our involvement with the recently formed Conservation Association of Botanical Societies reflects this. Since our member and past president, A C Jermy, is now Honorary Treasurer for CABS, it has been agreed that our Society can now have an additional member on that Committee.

Spore and Plant Exchange Schemes

Both the spore and plant exchange schemes have enjoyed another successful year thanks to the diligent work of the organisers. In the year ending December 1986, 150 applications were made for spores from a list of 391 species and varieties. The requests, as usual, were quite widespread, coming from Australia, New Zealand, Canada, USA, Brazil, South Africa, Holland, Germany, France, Denmark, Finland, Czechoslovakia and, of course, the United Kingdom.

The overseas members who replied early seemed pleased to have their list in advance. For 1987 the list is larger with 506 items containing many species new to the list and the early response has been greater than usual.

A great deal of interest is now apparent in *Asplenium, Adiantum* and *Cheilanthes,* so the stock of these species is rapidly going down, in fact quite a few are finished. We would urge members who can, to send in spores of these species so that we can meet the demand.

We extend our thanks to the many donors who have helped to build up such an interesting list.

Society Logo

Members will have seen the Society's new logo on the front cover of the 1986 'Bulletin'. It was designed by our President, Mrs Gwladys Tonge, and we hope that it will now feature on all the Society's letterheads and publications.

Finally, it is with much regret that I have to report the resignation of Mrs Marian Fyfe as Meetings Secretary due to personal commitments. We thank Marian for all her work as an Officer of the Society and wish her and her family well in the future.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 — HONORARY TREASURER'S REPORT — The Treasurer distributed copies of his balance sheet and after explaining the Society's income and expenditure for the past year, he was pleased to report that the deficit which was expected this year and which had prompted the increase in subscriptions was not quite as low as expected so the account just about remained solvent.

Dr Thomas's report was approved and adopted by the meeting and the President thanked Dr Thomas.

ITEM 6 — MEETINGS SECRETARY'S REPORT — It was with much regret that the General Secretary reported Mrs Marian Fyfe's decision to resign. Mr Busby reported his unsuccessful efforts to find a replacement, therefore the post of Meetings Secretary remains vacant. Mr Busby volunteered to compile the 1988 Meetings Programme.

ITEM 7 — REPORTS OF THE EDITORS —
'The Bulletin': A R Busby — Mr Busby apologised to the meeting for the errors occurring in the 1986 'Bulletin'. The evident poor proof-reading was due to the very late arrival of some meetings reports, preventing him from sending it to Miss Paul for checking, and due to the need to get the journal out on a fixed deadline.

'Pteridologist': M H Rickard — Mr Rickard reported that he now has sufficient copy for the 1987 issue and that it will be ready around May/June this year.

'Fern Gazette': Dr M Gibby reported that the 'Fern Gazette' should be ready during July 1987.

The President thanked the Editors for their reports.

ITEM 8 — ELECTION OF OFFICERS AND COMMITTEE — As in previous years, the President was pleased to note that both the Honorary General Secretary, A R Busby, and the Honorary Treasurer, Dr B A Thomas, had agreed to serve for another year. The President expressed the appreciation and thanks of the Committee and members to Mrs Fyfe on her retirement from the post of Meetings Secretary. Mr Busby expressed his hopes of finding a replacement for Mrs Fyfe next year. The President thanked Mr Busby for volunteering to compile the 1988 Meetings Programme.

Committee — The General Secretary reported that R J Rush and J R Woodhams were due for retirement as the longest serving members of the Committee. The President particularly thanked Mr Woodhams for serving an extra year to fill a vacancy on the Committee. Two nominations had been received for the vacancies: Jack Bouckley proposed by Dr N Hards and seconded by D Woolveridge and C R Fraser-Jenkins proposed by Dr B A Thomas and seconded by M H Rickard. Mr Bouckley and Mr Fraser-Jenkins were duly elected.

Election of Vice-President — The President expressed her great pleasure to the meeting that the Officers and Committee had received a proposal from M H Rickard, seconded by J W Dyce that "A C Jermy, past President of this Society should be elected as a Vice-President of this Society". In seconding Mr Rickard's proposal, Mr Dyce's letter expressed how much he welcomed the move and went on "Since 1959 when Mr Jermy became our Editor of 'The British Fern Gazette', at the same time that I became General Secretary, he has been one of the Society's most influential officers. It was he who took us into the botanical world and our growth since then has been largely due to his energy and enthusiasm. Over the years he has been most active in our affairs and has rendered great service to the Society. It is with very great pleasure that I second Mr Rickard's proposal."

Mr Jermy was duly elected by the Meeting with acclaim.

ITEM 9 — ELECTION OF AUDITORS — Mr Jack Bouckley and Mr Richard Lamb had notified their willingness to serve for a further year and were duly elected with the thanks of the President.

ITEM 10 — ANY OTHER BUSINESS — Mrs Rosemary Hibbs who was appointed by the Committee to take over the Plant Exchange Scheme addressed the meeting, urging members to send in lists of plants they have available so that she can issue a list to all UK members.

Reading Circle for the Royal Horticultural Society Journal 'The Garden' — Mr Busby has received permission from the Committee to explore the possibility of starting a reading circle for the RHS journal and asked the members present if anyone was interested. Several members indicated that they were.

National Council for the Conservation of Plants and Gardens — Mr Busby brought to the attention of the meeting the important work of this organisation and expressed his hope that this Society may be able to support its work financially.

As there was no further business, the President closed the meeting at 2.55 pm.

A R Busby
Hon.Gen.Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1986

EXTRACTS FROM 1985

ORDINARY ACCOUNT

INCOME		
£3962.17	SUBSCRIPTIONS	£4710.34
326.01	INTEREST ON ACCOUNTS	297.98
99.00	BOOKSALE PROFITS	150.00
	T-SHIRT SALES	107.00
		£5265.32
EXPENDITURE		
£1227.00	METLOC – PTERIDOLOGIST	£1359.00
1682.00	METLOC – GAZETTE	1779.00
962.00	METLOC – BULLETIN	760.00
346.56	PRINTING & STATIONERY	216.77
942.67	ADMINISTRATIVE COSTS & POSTAGE	1078.20
71.10	SUBSCRIPTIONS TO SOCIETIES	31.10
44.00	MEETINGS COSTS	66.41
14.94	BANK CHARGES	15.01
		£5305.49
£1411.74 D.R.	BALANCE FOR THE YEAR	£ 40.17 D.R.
	BALANCE CARRIED FORWARD FROM 1985	2570.27
	BALANCE CARRIED FORWARD TO 1987	£ 2530.10

PUBLICATIONS ACCOUNT

BALANCE CARRIED FORWARD FROM 1985			£1414.22
SALES –	Hardy Ferns	£230.00	
	Guide to H. Ferns	390.00	620.00
CARRIED FORWARD TO 1987			£2034.22

GREENFIELD FUND

BALANCE CARRIED FORWARD FROM 1985	£1881.26
INTEREST	101.77
BALANCE CARRIED FORWARD TO 1987	£1983.03

LECTURE MEETINGS AND VISITS

THE SPRING INDOOR MEETING, CARDIFF — 14 March. The meeting followed the business of the AGM. The President introduced the first of three speakers for the afternoon, Dr David Galloway of the BM (NH).

Dr Galloway is a New Zealander with a professional interest in lichens. His talk encompassed the various habitats to be found in his homeland, and was illustrated by a series of interesting colour slides. Although he spoke mainly about the geology and ecology of both North and South Island, he was able to touch on the more recent history of New Zealand and how Captain James Cook's expeditions in the late 18th century revealed the fascinating New Zealand fauna and flora to the world.

Just occasionally members caught a tantalising glimpse of ferns and he particularly mentioned Stewart Island as a 'fern paradise'. Dr Galloway ended his all too brief talk by urging members to visit New Zealand if they were ever able to do so. A brisk question-and-answer session made it obvious that given the opportunity, Dr Galloway's invitation to explore New Zealand would have been taken up there and then.

While our minds were still savouring the very attractive colour slides shown by Dr Galloway, Dr Nat Quansah of Goldsmiths' College prepared to give us an illustrated talk about his visits to Madagascar. Our eyes were now treated to the verdant scenery of this enormous tropical island in the Indian ocean.

Here again ferns are plentiful and we saw large drifts of *Pteris* and *Gleichenia.* Also figuring prominently in Dr Quansah's talk were plants of *Marattia, Tectaria* and *Asplenium,* with a special mention of that popular pot-plant, *Asplenium nidus.* Dr Quansah is currently studying the African species of *Selaginella,* and showed us something of the diversity of these curious clubmosses, specifically *S. lyalli* and *S. pectinata.* To my mind, *Selaginella* is the one group of attractive and interesting fern allies which is sadly lacking in our Society's attentions. Tree ferns also featured in Dr Quansah's slides and in the discussion following his talk they were the main topic of interest.

After the talks, members were refreshed with tea and cakes. When fully replete our host, Dr B A Thomas, kindly led us on a tour of his Department's herbarium and members were pleased to be given the opportunity to see the working and storage methods behind the professional face of the National Museum of Wales. Thanks are due to Dr David Galloway and Dr Nat Quansah for giving us such interesting talks and to Dr Barry Thomas and his staff for their generous hospitality.

A R Busby

AUTUMN INDOOR MEETING — 17 October. Seventeen members and guests assembled at the South London Botanical Institute, Norwood Road, London to hear Miss Pamela Schwerdt, head gardener at Sissinghurst Castle, give a talk entitled 'The Sissinghurst Garden'.

It was undoubtedly the recent hurricane force winds and the resultant difficulties of travelling in the south of England that effected the low attendance at this meeting. Miss Schwerdt, who has been head gardener at Sissinghurst for the last twenty-eight years, began her talk by illustrating the many hardy ferns planted there. Her excellent slides pictured such garden favourites as *Dryopteris wallichiana* and *D. erythrosora, Athyrium nipponicum* 'Metalicum', *Blechnum penna-marina* and *B. tabulare,* as well as British natives such as *Asplenium scolopendrium* 'Crispum', *Athyrium filix-femina* and its forms 'Plumosum', 'Vernoniae' and 'Minutissimum', and various *Polystichum setiferum* cultivars. It was pleasing to hear that a few years ago Miss Schwerdt had exhibited a plant of *Polystichum setiferum* 'Pulcherrimum Bevis' at a Royal Horticultural Society Great Autumn Show, where it received an Award of Merit.

Miss Schwerdt concluded her talk with general views of this lovely garden and briefly outlined the garden's history, dating from the reign of Henry VIII. Its present day planting and design is largely due to the skill of the poetess Victoria Sackville-West and her husband Sir Harold Nicholson, who took over the castle and gardens in 1930. It is now owned by the National Trust.

Paul Ripley expressed the appreciation and thanks of the meeting to Miss Schwerdt for a most interesting and 'ferny' talk. Thanks are also due to Mr Frank Brightman for hosting the meeting and to Patrick Acock for organising the meeting and providing refreshments.

A R Busby

KEW GARDENS — 16 May. Some thirty members assembled in the lower nursery at the Royal Botanic Gardens, Kew for our annual May visit. After a welcome from our host for the day, John Woodhams, assistant curator, the party was guided around the lower nursery which houses ferns from many parts of the world.

He selected various species and explained their significance to the botanist and the problems the staff have in finding the optimum conditions for cultivation. The nursery houses many species of *Selaginella,* many of them growing as epiphytes on suspended blocks of moss-covered wood.

The party then moved on to the new Princess of Wales conservatory, pausing for a few moments to gaze at the site of the old fern houses, the venue of so many happy Society meetings in past years, but now cleared and ploughed. Immediately we entered the conservatory those of us present on last year's visit were able to appreciate the amount of work that had been done to make it ready for the opening by the Princess of Wales in July. With very few exceptions the ferns looked in excellent condition and quite established in their new surroundings.

After touring the new conservatory, we were treated to some very welcome tea and biscuits in the staff accommodation area, while John raffled a couple of dozen young ferns which he had potted up from his own collection. This resulted in several members taking home a living souvenir of their afternoon at Kew.

Thanks are due to John and Joan Woodhams for once again hosting a very enjoyable day at Kew.

A R Busby

HULL BOTANIC GARDENS AND MRS JEAN MARSTON'S NURSERY — 20 June. Seven members met outside Hull University Botanic Gardens at 57 Thwaite Street, Cottingham, Hull, where they were kindly met by Miss Anne Braithwaite, curator of the gardens. In a singularly cool wet month we had chosen one of the few dry days for our visit. The gardens were founded in 1948, and were then in the charge of Mrs Jean Marston, whose nursery we were to visit later that day.

Miss Braithwaite led us around the large area under glass where there was a very interesting selection of tropical and temperate plants, and she patiently answered our many questions. We were particularly impressed with the diversity of indoor ferns, including a wide range of *Adiantum raddianum* cultivars and a good selection of *Pteris, Blechnum, Platycerium, Davallia* and *Hemionitis* species to name but a few.

Tree ferns were represented by *Dicksonia antarctica* and *Alsophila* sp.. *Marsilea drummondii, M. quadrifolia* and an unnamed species of *Marsilea* were the subject of much discussion. Members were also interested to see Hull's collection of *Selaginella* species, those attractive fern allies so often neglected by the modern amateur grower.

After our tour of the colourful temperate glasshouse, we explored outside, seeing some interesting water features and boggy planting areas. A small cool greenhouse was home for a good collection of British and European species of ferns, including *Asplenium* and *Cheilanthes.* A fern border close by boasted several British fern cultivars including *Osmunda regalis* 'Cristata' and *O. regalis* 'Crispa', *Matteuccia struthiopteris* and several varieties of *Athyrium filix-femina, Dryopteris filix-mas* and *Polystichum setiferum.*

After such an enjoyable visit, we were very sorry to hear that there are no firm plans to maintain the garden after this year. Once again practical science appears to be a victim of the balance sheet.

After a splendid pub lunch at Molesworth, we made our way to the fern nursery of Mr F and Mrs Jean Marston of Nafferton, near Driffield. A hot June sun bathed the nursery as Mr and Mrs Marston welcomed us at their gate. First impressions were of a flat, windswept site, not the kind of countryside normally associated with ferny combes, but the nursery lies snug in the midst of windbreaks of trees and shrubs.

On entering the nursery, it becomes very obvious that the Marstons are not just fern growers but very much fern enthusiasts. Every inch of space is given over to ferns, either as saleable stock or as part of their own private collection. The party was particularly impressed with a most attractively designed fern area with floor and stone-lined walls densely covered with the lush green fronds of hardy and semi-hardy ferns. Next to this is a glazed lean-to greenhouse filled with many British and European ferns, including various species of *Asplenium* and *Cheilanthes.* Further on is a slat house containing most of the ferns that are for sale. We were most impressed with the quality and cleanness of the plants, all clearly priced to encourage customers to make their selection. Needless to say, several of our party could not resist making purchases and engaged Mrs Marston in conversation on the merits of the various species and varieties. The nursery also offers an interesting selection of Selaginellas.

Along the west side of their home, sharing the heating from the house, is another lean-to greenhouse which is home to more exotic species requiring high temperatures throughout the winter. A wide selection of varieties of Maidenhair ferns and *Pellaea, Pteris, Pityrogramma, Lygodium* and many other genera are housed here.

All too soon it was time to take our leave. Thanks are due to Miss Anne Braithwaite of Hull Botanic Gardens for her generous hospitality and to Mr F and Mrs Jean Marston for so kindly receiving us.

A R Busby

REGIONAL MEETINGS 1987

WEST MIDLANDS

A R Busby

'Welcome to Spring' Flower Show — 18-19 April. Due to redevelopment in the area, this year's show was moved from its usual site in front of Notcutts Garden Centre at Monkspath, Solihull, to the assembly hall of Arden School, Station Road, Knowle. As anticipated, the move affected attendance, the show having in previous years enjoyed the advantage of the usual crowds of gardeners and their families visiting Notcutts, and the passing traffic on the very busy A34 Birmingham to Stratford-upon-Avon road. In contrast, Arden School is situated away from the main shopping areas.

Exhibits in the show were up to their usual high standard and there was much interest in our society's stand displaying literature and fern plants.

Thanks are due to Mrs Doreen Watson and the Solihull Horticultural Society for allowing our group to exhibit, and to Ray and Brenda Smith for spending time with me on the stand.

Ray and Brenda Smith's Open Day — 14 June. Twenty members and guests took advantage of Ray and Brenda's kind invitation. In spite of intermittent light rain, we managed to spend a good deal of the time in their garden which, due to the wet spring, looked green and lush. Ray is the fern grower and Brenda's interest lies more with alpines, herbaceous perennials and shrubs, and they have managed to blend their interests into a most attractive garden in which any visiting gardener would find a great deal of interest. On their verandah alongside the house, Ray and Brenda's seed and spore sowings were displayed, and much time was spent discussing them.

Fortunately, while we were indoors enjoying a splendid tea the weather brightened and we were able to enjoy another look at the garden. We finally parted, many of us carrying ferns that Ray was generous enough to part with, together with other plants that members had brought along for exchange.

A very big thank you to Ray and Brenda for their kind hospitality.

Ryton Gardens — 9 August. It was on a wet and miserable day that eighteen members and guests assembled at Kirby Corner Road for a visit to Ryton Gardens near Coventry. Ryton Gardens is the new Henry Doubleday Centre, where people research and demonstrate the value of organic gardening. Although the major part of the garden is given over to vegetables, they also have rose, herb and herbaceous borders. Ferns do not feature at Ryton but I think the party found the visit interesting in spite of the appalling weather.

A cold and somewhat bedraggled group retired to the centre's warm restaurant for refreshments, and some time was spent in the centre's shop which sells various garden commodities, books and plants.

After Ryton Gardens the plan was to return to Kirby Corner Road for the rest of the afternoon, but happily this was changed by the kind invitation of Mr & Mrs Gilbert Hickman to visit their garden at Stoneleigh Road, Coventry. The party was surprised and thrilled by what they saw there. The garden displayed Gilbert's interest in alpines, ferns, herbaceous plants and shrubs, and proved to be a testament to his skill as a plantsman in every sense of the word. All too soon we had to convey our thanks and goodbyes. Gilbert's garden of treasures was the main point of discussion over tea on our return to

16 Kirby Corner Road. After the visit to Gilbert Hickman's garden it was with much reluctance that I submitted my small patch to the scrutiny of the party.

Thanks are due to Mr & Mrs Hickman for their kind invitation which proved to be the high point of the meeting and made what was otherwise a dismal day worthwhile. Thanks also to Margaret Busby for entertaining eighteen members to tea in a room designed for four.

Matt and Margaret's Illustrated Wine and Cheese Party — 10 October. Twenty members and guests assembled in the University of Warwick's Senior Common Room at Westwood for our annual autumn get-together. The main feature of the evening was the showing of members' colour slides, covering a wide range of subjects. Ferns, of course, featured prominently, the main contribution here being by Clive Brotherton, who displayed slides of his collection of *Pellaea, Cheilanthes* and *Notholaena.*

Ray Smith showed slides of his garden ferns and several slides taken at the 1987 Southport Flower Show. Richard Lamb really took the prize for slides with artistic merit, among which were studies of Ironbridge, Shropshire and Chesterton Mill, Warwickshire. Gilbert Hickman showed some fascinating slides of the seed dispersal of *Geranium sanguinium* and related one or two stories of how he observed and photographed the life-cycle of the puss-moth and other entomological subjects.

My thanks to these and other members who brought along slides, and fern plants for exchange. Thanks are also due to Rita Coughlin, Margaret Busby and Elsie Swann for all their hard work in preparing food for the evening.

SOUTH EAST

Pat Acock and Paul Ripley

Chromosome Meeting at Chelsea Physic Garden — 8 November 1986. About fifteen members met at the Gardens for a well organised laboratory meeting. Mary Gibby, though far from well, gave us an informative background talk on counting chromosomes. We then proceeded into the laboratory where, despite the lateness of the season, we were each able to practise squashing and staining a few sporangia. As it was difficult to find many sporangia at the right stage, Mary found us some pickled material to try. We were also able to look at some prepared slides. After tea and browsing through a number of fern books we all came away resolving to look at chromosomes again.

Horsetail Meeting at Scadbury Field Centre — 25 April 1987. The London Borough of Bromley inherited a wood from a medieval estate. The wood was virtually untouched except for occasional hunting. Close by a disused school has been turned into a Field Study Centre with good facilities, where seven members from the South East and Mr Keith Gillet, the warden, met for an afternoon to study horsetails.

Following an introduction to the Centre we set out on a glorious afternoon for a quick look around a small part of the estate with a view to bringing back fertile spikes of *E. arvense.* Within two hundred yards of the Centre we found *Ophioglossum vulgatum.* Further on we tracked down a large colony of fertile *E. arvense* spikes and spent some time trying to photograph them dehiscing. A well established group of *D. affinis* ssp. *affinis* interspersed with *D. filix-mas* and *D. dilatata* unfurling looked really splendid in the bright sunshine.

Back at the Centre facilities were available for us to prepare stem sections of eight horsetails, to look at five different fertile spikes, and to try to identify them from given cross-sections. This turned out to be reasonably successful even using a hand lens.

Finally we left our calling card, an advert for all who visit the Centre, a spleenwort wall built into an aquarium.

Denge Marshes and Fairlight Glen — 4 July. On a scorching hot Saturday, five members met in the Royal Society for the Protection of Birds car park on the Denge Marshes for a coastal foray. We had a comparatively lazy day in that the first site was a mere twenty yards from the car park. We were rewarded by a magnificent display of *Thelypteris palustris* growing under goat willow. It was the dominant ground cover in the 'car park pit'. We then walked into a larger pit to the south-east to find an even more luxuriant stand of *T. palustris.* The fronds at the second site were beginning to unfurl, but no sign of fertility was observed.

Dryopteris dilatata and *D. carthusiana,* together with *Athyrium filix-femina* of some considerable size occurred on the tussocks. A short drive along the approach road on the way out revealed large quantities of *Equisetum fluviatile* and *E. palustre* in the ditches.

At the head of the Fairlight Glen, a welcome farm is now open for cream teas and lunches. The Glen is the middle of three deeply cut valleys east of Hastings that head south to the sea. The dominant fern on the valley side is *Polystichum setiferum.* We were able to record *Dryopteris affinis, D. dilatata, Athyrium filix-femina* and a medium-sized *Oreopteris limbosperma* as well as large tufts of *Asplenium scolopendrium.*

Stephen Munyard mentioned that fossil ferns were often uncovered as the clay cliffs eroded, but we were unlucky on this occasion, although we now know where the nudist beach at Hastings is!

We almost missed *Equisetum telmateia* as we walked back up the steps where it colonised the disturbed cliff face. Following a tip by the lady at the tea-shop whose father knew his ferns and was now in his ninth decade, we set off for Stream Lane looking for *Polypodium.* This thirteenth century lane is preserved by the National Trust and lived up to its name. Banks of *Polystichum setiferum* were seen as well as *Dryopteris dilatata,* while nearer to the cliff we found *Equisetum arvense* but we failed to find any *Polypodium.*

A fine hot day even in the south-east resulted in us seeing four species of horsetail and nine species of ferns.

Savill Gardens, Windsor — 6 September. On an afternoon marginally drier than many this summer, thirteen members and guests met to visit these beautiful gardens on sandstone, adjacent to Windsor Great Park and other large expanses of mature woodland.

Radiating from a brook and a series of lakes, the gardens are principally laid out in beds each containing a variety of species. There was hardly a bed which did not contain a stand of at least one attractive fern species or variety. In an afternoon we could in no way do justice to the astounding wealth of pteridological interest. Picking examples at random, I was particularly impressed by the number of *Dryopteris* hybrids. *Matteuccia pennsylvanica* was an interesting variation on the usual *M. struthiopteris* and the massed *Dryopteris crispifolia* also deserves a special mention.

The hand of a botanist and knowledgeable pteridologist was obvious in the number and range of species and in the erudition (to me!) of their labelling. My only criticism is the disappointingly poor situations chosen to house some of the fern varieties from Philip Coke's collection. The garden has other attractions apart from the beauty of its setting: a beautiful rose garden for instance, a remarkable collection of hydrangeas, and a large temperate greenhouse.

Dryopteris hybrids abounded in the greenhouse, for example *D. x telesii (D. crispifolia x D. dilatata), D. x madalenae (D. azorica x D. crispifolia)* and *D. x sjoegrenii (D. azorica x D. dilatata). Pyrrosia hastata* was stunning in its simple beauty, and I was also struck by *Davallia trichomanoides* and *Blechnum amabile.*

Outside again, I noticed *Oreopteris limbosperma,* presumably not planted but an indicator of the habitat. The gardens are a tribute to their Keeper, Mr John Bond. Every fern lover within 500 miles of London should visit these gardens at least twice a year!

The cafeteria was excellent and so was the fine collection of sporelings and plants generously distributed by Rebecca Elks and Margaret Harris.

LEEDS & DISTRICT GROUP

Lake District — 26-28 June. Our first field study of 1987 was in the Lake District. On the Friday evening some of us met at the home of Dr Kevan Chambers, our leader for the weekend, and spent quite a long time looking round his very well-stocked garden with many established ferns growing in the large, imposing limestone rockery. After this we went indoors and spent an hour or so chatting and partaking of refreshments served by his wife and parents.

On Saturday we met at Troutdale Cottage, Borrowdale, and set off southwards down the main road. *Phegopteris connectilis* was the first fern we saw followed by *Dryopteris filix-mas, Blechnum spicant, Asplenium ceterach* and *A. trichomanes* all along the road and on the bridge at Grange. Once we were on the other side of the River Derwent and had turned left to go upstream, we came across a large stand of a ramose form of *Polypodium vulgare* growing in a dry-stone wall. We continued along the river, passing on the way *Asplenium ruta-muraria, Athyrium filix-femina, Dryopteris dilatata* and *Cryptogramma crispa,* before turning uphill towards the west side of Castle Crag. It was on this Crag that we saw some plants of the Forked Spleenwort — *Asplenium septentrionale.* It was the first time we had seen this extraordinary little fern on a group outing and without searching too far we had spotted about a dozen plants on this cliff face. After climbing uphill for about three quarters of a mile we turned left off the main footpath towards Borrowdale village. In some woods, about four hundred yards from the stream, we found *Hymenophyllum wilsonii* growing on a very large boulder.

It was quite a humid, thundery type of day and as we sat down for our sandwich lunches it started to drizzle and the flies became a bit of a pest. Consequently we did not stay very long, and soon set off again down the River Derwent to the east side of Castle Crag during which time we saw *Gymnocarpium dryopteris, Cystopteris fragilis* and *Dryopteris affinis.*

Sunday was the day for travelling to the northern part of the Lake District and an increased number of us met in the car park at Caldbeck to work 'The Howk'. We moved off to the west along the Parkend Beck, passing waterfalls and old mill ruins on the way upstream. There had been a lot of very heavy rain and the stream was quite impressive.

This was a very interesting walk during which we saw *Asplenium ruta-muraria, A. scolopendrium, Cystopteris fragilis, Polystichum aculeatum, Polypodium vulgare, Dryopteris filix-mas, D. dilatata, Athyrium filix-femina* and *Equisetum arvense.*

Later in the afternoon bad weather 'stopped play', and we reluctantly made our way homewards.

J Bouckley

Turner Clough — 11 July. It was with a sense of panic that I learned that Mr Frank Murgatroyd was unable to lead the trip to Turner Clough. Horrors! I would have to lead it myself. Frank, however, true to form had organized everything and took me for a preliminary trip to reconnoître.

A small but determined group of four met during a cloudburst at Ripponden, our purpose at Turner Clough being to search for *Hymenophyllum wilsonii,* which was recorded in 1834 by H. Leyland and again in 1838 by S. Gibson. A record also exists by W. Wilson himself as being "Near Halifax" (Phytologist i:453 in 1844), possibly the same site.

However, our first port of call was to be at Ripponden to see the stands of *Osmunda regalis* growing by the river. A pleasant walk along the riverside path gave us a delightful start to the day with *Pteridium aquilinum, Dryopteris dilatata, D. filix-mas* and especially *Athyrium filix-femina,* both the red and green-rachised varieties growing luxuriantly. Several plants of the latter were so finely dissected and had such long apices that we wondered if they could be varieties. Across on the far bank grew the plants we had come to see: *Osmunda regalis,* five in all, two being of quite considerable size. Mr Murgatroyd had suggested to me that they may have been garden escapes as there are several little niches similar to this in Calderdale where this plant finds conditions favourable for growth and plants do occur in gardens at Hardcastle Crags in the next valley. Certainly this riverside must have provided an ideal habitat for plants as we noticed other "escapees" — a redcurrant covered in berries and a garden phlox. Also typical of this area were many plants of the delightful Sweet Cicely, *Myrrhis odorata,* and also that relentless invader *Impatiens noli-tangere,* the Himalayan Balsam.

At last we tore ourselves away and took the cars two miles further up the valley to Turner Clough. The Clough is typical of the area, comprising acid soils on Millstone Grit with steep valley sides, the absence of a proper path along the banks of the river making the going quite tough in places. This was accentuated by the earlier downpour which had made everything slimy and we were soon slipping over the wet rocks — a difficult terrain, but ideal for filmy ferns. Soon all the acid-indicator ferns were evident, plenty of *Equisetum palustre, Dryopteris filix-mas, D. dilatata,* again the red and green-rachised Athyriums, *Oreopteris limbosperma,* and on dry ground *P. aquilinum* and *Blechnum spicant,* all these increasing in lushness of growth the further up the clough we went.

We spent some time looking at a plant of *Dryopteris affinis* to determine its sub-species using Chris Page's book. We decided on subsp. *affinis* for this plant as it was very golden in colour, heavily covered in rust coloured scales and on one frond showed the characteristic short, sessile upper pinnule on the basal pinna as described to Richard Unett by Anthony Pigott on a recent trip.

We were further excited by a large male fern, not very fertile and bearing intermediate characteristics between *D. affinis* and *D. filix-mas,* which we thought could be *D. x tavellii* (now *D. x complexa)* and a little further on a more fertile *Dryopteris,* darker green, with not very truncated, toothed pinnules which we thought could be *D. affinis* subsp. *borreri.* A frond of each was taken for Clive Jermy to identify. (Clive confirmed the subsp. *borreri* but it was too early and the spores were not ripe enough to confirm the hybrid. He felt it could be what is now called *D. affinis* subsp. *cambrensis*).

The next point of excitement was at the top of the clough where there are numerous inlets on the left bank. It looked an excellent site for filmies and would certainly have given Bryologists enough work for a month, but despite our search during which we missed the *Trollius* which grows there, we still found nothing that we hadn't seen before except *Equisetum sylvaticum.* At this point I started heading for higher ground, a little too soon I must add, for we missed the *Phegopteris connectilis* and the route was steep and tiring. One point of interest, however, was a patch of very late flowering bluebells in a particularly wet part.

Thus the trip ended. Although we had failed to find the *Hymenophyllum* we all enjoyed ourselves thoroughly and concluded with a strawberry tea back home in Elland. I might even lead another trip next year!

M Rothwell

Leck Beck Head — 12 July. The day turned out to be one of the few fine days of the summer. This made it all the more pleasant for a group of avid pteridologists plus associated sporelings to study the rich fern flora of Leck Beck Head.

Leck Beck Head SSSI covers some 700 hectares on the Lancashire/Cumbria border. The site overlies carboniferous limestones and is riddled with potholes and caverns. This explains why our party was overtaken by numerous people in wetsuits who seemed to disappear without warning. The calcareous nature of the area also explains why we found 20 pteridophytes, including one horsetail *(Equisetum arvense)* and two clubmosses.

The excursion began at the potholers' base camp from where we walked over open, acidic moorland to Ease Ghyll. On the way we saw the horsetail and in a pothole, a ramose form of *Polystichum aculeatum.* Once in the ghyll we explored an awe-inspiring waterfall and cauldron complex with its walls liberally festooned with ferns such as *Asplenium ruta-muraria* and *A. trichomanes, A. scolopendrium,* and more *Polystichum aculeatum.* Some 30 feet up the side of the falls, a young specimen of the latter looked remarkably like *P. lonchitis.* Unfortunately hopes were dashed when the leader scrambled up, the long way round, to examine the specimen. Having persuaded the rest of the party to join him at the top we carried on up the dry ghyll to encounter our first *Asplenium viride. Cystopteris fragilis* was found in quantity, and also a *Polypodium* plant provoked much discussion and not very much decision, being logged down as *P. vulgare* agg.

After passing a few more holes of *Homo sapiens* cv 'descendens', *Gymnocarpium robertianum* came into view amongst a pile of limestone boulders. Several of these features were found along the eastern side of the ghyll and were the only places where we could virtually guarantee to find *Dryopteris submontana.*

By this time the Group were restless so a carefully planned lunch stop was called in one of the ferniest picnic spots I have found to date, a total of 15 pteridophytes being visible (albeit with a little imagination in the case of the clubmosses) in a 30 foot radius. The two clubmosses, *Huperzia selago* and *Selaginella selaginoides,* proved more than a little difficult to refind (being present on a preliminary visit some three weeks previous), but eventually the bottle brushes of the former and the lime-green yellow cones of the latter were discovered in the close grazed turf of the ghyll side.

After lunch the rate of discovery slowed. We ambled through huge stands of *Dryopteris affinis*, and passed occasional *D. filix-mas*, *D. dilatata* and *Athyrium filix-femina*. Such pteridological satiation soon produced a blasé attitude toward even *Asplenium viride* and *Gymnocarpium robertianum*. Interest however was re-kindled by the discovery of some areas of acidic peat supporting *Dryopteris carthusiana*, *Blechnum spicant* and the appetisingly scented *Oreopteris limbosperma*.

A few yards on we found water which we followed up to another waterfall. Not quite as spectacular as the first, but at least it was 'working'. Above this fall there were some more limestone cauldrons fashioned by swirling water. We then turned back and went downstream to where we had first joined the ghyll. Here three intrepid (gullible!) members attempted to follow the course of the stream down a deep wooded gorge, but soon gave up and returned to base for a well-earned cup of tea. I suppose it also ought to be mentioned that we did see some *Pteridium aquilinum*.

B Wright

Fountains Abbey — 25 July. A fine July morning saw six members of the Leeds and District Fern Group gathering at Fountains Abbey, a magnificent monastic ruin set in the equally magnificent landscaped river valley, one of the few surviving examples of a Georgian green garden.

A mention in Heath's "British Fern Varieties" of Fountains Abbey as being one of the places where the Ear-lobed Common Polypody *(Polypodium vulgare* "Auritum") had been found, gave us something interesting to look for amongst the many plants of *Polypodium vulgare* which grow on the walls at Fountains. Immediately upon entering the grounds we started examining Polypody fronds; some did show a lobe-like enlargement on the basal pinna, but none so pronounced as in the illustration in Heath's book. Ramose and bifid fronds were also found.

The footpath we followed took us along the top of the south side of the valley: *Dryopteris filix-mas*, *D. dilatata*, *D. affinis* subsp. *borreri*, *Blechnum spicant* and *Athyrium filix-femina* (red and green stemmed) were seen growing by the path side. Richard Unett made an interesting discovery amongst the *D. filix-mas* – a crown of very depauperate fronds, the pinnae reduced to short lobes, dark green and apparently healthy. Close by was another crown of very erect, almost perpendicular, depauperate fronds with white edges, although these fronds didn't look so healthy and the variegation may have been caused by disease. Further along the path the underlying rock changed abruptly from sandstone to limestone and we then started to see *Polystichum aculeatum* and *Asplenium scolopendrium*. We decided to have lunch before looking at the Abbey ruins.

After eating our lunch amidst a flock of extremely tame chaffinches we toured the Abbey walls. A forked Hart's-tongue and plenty of *Asplenium trichomanes* and *A. ruta-muraria* were seen. Frond shape of the Wall-rue varied from short and obtusely rounded to elongated and toothed. Wallflowers, pinks and marjorams, relics of the monks' gardens, were growing in the masonry, along with many other flowering plants.

We finished the day by leaving the Abbey grounds and following the River Skell upstream for about a mile or so. A fine cloud-like stand of *Equisetum telmateia* was encountered growing by the side of the footpath. Our first *Pteridium aquilinum* of the day was seen, followed by *Equisetum arvense* and finally *E. sylvaticum.* On the way back we checked a meadow for *Ophioglossum vulgatum,* recorded there in the nineteenth century, in vain, alas, but it was agreed by everyone that all in all the day had been enjoyable and worthwhile.

R Adams

Pilularia Survey at Strensall Camp — 26 August. On Wednesday, 26 August, Richard Unett, Barry Wright and Jack Bouckley made a return visit to Strensall Camp, an army camp just to the north-east of York, to continue our search for *Pilularia globulifera.* During 1986 some of us had spent some considerable time looking for this plant and we had found two stands of it growing in a fire-break along the eastern side of the area. This year, the weather had been mainly wet and consequently there were many more wet places than twelve months ago, and the Pillwort likes these wet conditions. The weather was atrocious but we could not put off the search, as careful arrangements had been made with the Army authorities to ensure there would be no explosives flying around. So, clad in gum boots, waterproof jackets, trousers and headgear, we started off along the fire-break to check first of all that the areas of this plant which we had previously seen, were still thriving. Yes, thankfully they were still there and at intervals as we continued along the break we came across further stands, some in water and a few growing above the water level. It seems that the *Pilularia* growing along this fire-break is increasing, even though the whole length of it has to be treated with a herbicide every other year and harrowed between those treatments. This appears to kill any tall grasses etc., together with the green parts of the pillwort, at the same time leaving the rhizomes to sprout again. The harrowing spreads the rhizome along the break to form further colonies. We found one patch of the plant in a concrete-sided drain which was quite a long way from the fire-break. We have still got some more of the Camp to search and we hope to return there in 1988.

J Bouckley

River Wharfe — 26 September. On Saturday, 26 September, eleven of us met at Bolton Abbey car park to do a field study along the valley of the River Wharfe. The weather was good and the going was fairly easy as we started off upstream along the western bank, passing The Strid, a length of river which narrows to just a few feet in width and the water rushes along between the rocks, making it quite dangerous. The river above and below the Strid must be about fifty yards wide so this ravine must be very deep to take all of the water which comes down from Kettlewell, Cam Houses and part of the Pennines. We had our packed lunches quite close to the Strid and then continued along the same bank to Aqueduct Footbridge which we crossed to make our return trip down the other bank. This footbridge is not a public right of way and it can be locked at any time by The Yorkshire Water Authority or by Bolton Abbey Estate. It carries a water main over the river and anyone crossing it does so at their own risk.

The ferns seen on this, our last meeting for 1987, were *Cystopteris fragilis, Dryopteris dilatata, D. filix-mas, Blechnum spicant, Athyrium filix-femina, Polystichum aculeatum, Dryopteris affinis* subsp. *borreri, Polypodium interjectum, P. vulgare, Phegopteris connectilis, Gymnocarpium dryopteris, Pteridium aquilinum* and *Asplenium trichomanes.* It is possible that we saw *Dryopteris x deweveri,* but this is subject to confirmation.

We are now looking forward to the start of the 1988 programme.

J Bouckley

SOUTH WEST REGION

Mary Potts

Field day in Devon — 12 July. The first meeting in the South West region was arranged by Dougal Swinscow. The weather was already warm as the party of twelve members and friends met above Becky Falls, on the edge of Dartmoor. We explored the woods above the waterfall which contained most of the larger ferns, particularly the *Dryopteris* species. We then explored the falls (an impressive, though well-trodden beauty spot) scrambling over huge boulders and natural stepping-stones. We peered into every crevice for *Hymenophyllum wilsonii* which Dougal assured us grew there. Eventually Dougal located it himself, growing on boulders some distance from the stream.

After lunch we visited an area of woodland around the river Bovey. Though most of the large woodland species of fern grew in abundance we saw nothing remarkable (except some White Admiral butterflies) and soon retraced our steps from the, by now, almost tropical torpid heat.

We next visited Yarner wood (scene of a previous south west meeting in 1985) and looked at the superb royal ferns growing just below the lodge. After an all too fleeting visit to the Rock Nurseries the day finished at Dougal's house in Topsham for a splendid tea provided by Josephine Swinscow.

Dougal's garden is now of personal interest to me. One of the joys of garden visiting is to see the gradual evolvement of a garden and the owner's vision gradually taking shape. Dougal has managed to create a number of impressions in a very small space and I particularly enjoyed the aura of tranquility around the pond and the fountain. The ferns of note this year were two variants of *Athyrium filix-femina* 'Plumosum Druery', one of which was almost identical to 'Kalothrix'. Thank you Dougal, for another interesting day and Josephine for another sumptuous tea. We are very grateful for your support at our south west meetings.

THE AMERICAN FERN SOCIETY INC

wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the "Fiddlehead Forum" six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to "Fiddlehead Forum", the scientific quarterly "American Fern Journal". Membership costs $8.00 and $15.00 per annum, respectively. For particulars please write to Dr David S Barrington, Dept of Botany, University of Vermont, Burlington VT 05401, USA. Prospective members residing in Great Britain should write to Dr B A Thomas, Dept of Botany, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP. British members should note that the American Fern Society has to add a postage surcharge for overseas members. Membership will cost $10.00 and $19.00 respectively.

NATIONAL FIELD MEETINGS 1987

DERBYSHIRE MEETING — 18-19 July

Day One

Alan Willmot

Twelve members and friends assembled at the car park, Parsley Hay Station on the Saturday morning just as the rain started; it followed us all weekend. No doubt the rain helped explain why the party was only half the size it should have been. However, the leaders would have appreciated being told in advance that people who had booked for the weekend were not coming. Despite the rain we set off for our first site, Bleaklow Cutting, comforting ourselves with the thought that the rain would make the ferns grow. The cutting in Carboniferous Limestone at Bleaklow (SK/150630) was as interesting as ever, with almost all the ferns to be expected on limestone outcrops in Derbyshire. The species found were:

Common male-fern	*Dryopteris filix-mas*
Broad buckler-fern	*D. dilatata*
Golden-scaled male-fern	*D. affinis* ssp. *borreri*
Wall rue	*Asplenium ruta-muraria*
Maidenhair spleenwort	*A. trichomanes*
Green spleenwort	*A. viride*
Hart's tongue fern	*A. scolopendrium*
Common polypody	*Polypodium vulgare*
Hard shield-fern	*Polystichum aculeatum*
Lady-fern	*Athyrium filix-femina*
Brittle bladder-fern	*Cystopteris fragilis*
Limestone polypody	*Gymnocarpium robertianum*
Mountain fern	*Oreopteris limbosperma*

The presence of mountain fern and the common polypody was surprising on limestone outcrops, as was the occurrence of ling *(Calluna vulgaris)* over large areas of the cutting. The more geologically minded members of the group therefore had a closer look at the rocks. They pronounced them to be sandstones and in certain areas calcareous sandstones. By this time people were becoming decidedly damp and by a vote of feet an early lunch was called for at the local café. The cold and wet made the thought of hot coffee and soup even more inviting than the thought of real ale in the local pub!

After lunch we moved a few miles south to Friden to visit some small pockets of clay and sand which occur in this part of Derbyshire in depressions in the carboniferous limestone plateau. The sand in these pockets is excavated and used locally to make firebricks. We first visited Long Dale where waste from the pockets has been dumped in the past to allow a light railway to run from the brickworks to the pockets. In Long Dale itself (SK/175612) we found Adder's-tongue *(Ophioglossum vulgatum)* growing in limestone grassland at the base of a wall. In the past the dump in Long Dale (SK/172614) has had three species of lycopod growing on it but none could be refound. Nevertheless we did discover lady fern, common male-fern and broad buckler-fern growing with two ferns we had not seen in the morning. These were narrow buckler-fern *(Dryopteris carthusiana)* and another subspecies of the golden-scaled male-fern *(D. affinis* ssp. *affinis)*. Ling grew on parts of the dump but all the ferns were growing in tall herbaceous vegetation around the dump's edges.

Next we turned our attention to two of the pockets themselves which had been excavated for sand. In the pit below Long Gallery Plantation (SK/185164) we came across common male-fern, broad buckler-fern, subspecies *borreri* of the golden-scaled male-fern and lady-fern growing again in tall, herbaceous vegetation with a small amount of adder's-tongue. Then in areas of shorter, herbaceous vegetation and bare sand we found the three lycopods that had been seen at the dump some ten years previously. Fir clubmoss *(Huperzia selago)* was discovered first. It was growing almost luxuriantly in a small area of bare sand. It was fertile and there were also numerous bulbils. Around the larger plants smaller ones were becoming established; whether this was from spores or bulbils could not be ascertained but bulbils seemed more likely. Nearby the first of several vigorous patches of the stag's-horn clubmoss *(Lycopodium clavatum)* was found, its upright branches bearing cones demonstrating why it has its common name. Finally four small patches of the alpine clubmoss *(Diphasiastrum alpinum)* were discovered. These were not fertile and were nowhere near as vigorous as the plants of the stag's-horn clubmoss.

The Kenslow Knoll pit at SK/181615 is almost adjacent to the first pit but it is larger and has a permanent body of open water. As we had seen no horsetails we decided to investigate the water. As we had expected this area was home to large stands of horsetails. The common horsetail *(Equisetum arvense)* grew in the tall, herb vegetation and on the bare areas of soil around the pond. The marsh horsetail *(E. palustre)* grew in marshy areas at the edge of the pond, as did the water horsetail *(E. fluviatile).* This latter species also grows out into the pond, emerging from the surface of the water between the pond's edge and the beds of pondweed in the deeper parts of the pond.

At this point Nick Hards tried to raise enthusiasm for further visits before dinner by describing other species that could be seen in the vicinity. However, by now the rain had penetrated most waterproofs and even the thought of rusty-back fern could not raise enough enthusiasm for another foray that day.

Day Two

Nick Hards

We met up in Millers Dale (SK/157731) since although this site was visited on both of the last two visits to Derbyshire, we had different people this time. There are no ferns here which cannot be seen elsewhere in the county, but there are more in a small area, and readily accessible.

Before leaving the road we looked at a very large colony of *Equisetum fluviatile.* This was growing in shade and was well branched, with stems up to four feet long. The first additional species seen here was *Polypodium interjectum,* looking very typical, with the larger, broader, arching fronds and the oval sori. These features, plus the pale annulus clearly visible on the old fronds (it was dark on the *P. vulgare* seen yesterday), made it relatively easy for once to distinguish the two species, since all the characters were so well developed. We also found a very odd polypody with very short, broad triangular fronds and the new fronds only just unfurling. It was not however particularly serrated and was not fertile. A small piece of rhizome was collected and hopefully I will be able to grow this on and see if it is *P. cambricum* (formerly *P. australe*).

Another species in the woods was *Polystichum setiferum,* which is scarce in Derbyshire and previously I only knew of one plant here. I had found a second plant earlier this year and another was found on this meeting by Tim Edwards, a new member. Also in the woods were *Dryopteris affinis* subsp. *borreri, D. filix-mas, D. dilatata* and *Cystopteris fragilis.* On the railway cutting were *Asplenium trichomanes, A. ruta-muraria, Gymnocarpium robertianum* and *Polystichum aculeatum.*

The star attraction here is *Dryopteris submontana,* most of it high up the railway cutting and inaccessible. With the help of binoculars Alan and I had previously counted over 30 plants, but we did not repeat the exercise in the pouring rain this time. One of the original two plants seen near ground level in 1980 had grown considerably but the other had disappeared (it was hanging on by just one root three years ago). However, I found another plant low down which could also be studied and photographed in comfort.

Lastly in Millers Dale we walked up to the mine spoil heaps in the main part of this beautiful Derbyshire Wildlife Trust reserve. *Botrychium lunaria* is remarkably abundant here, mainly on the spoil heaps but also in the grass generally. Alison was the first to see it but we were all able to find our own plants. The other interesting plants included Grass of Parnassus *(Parnassia palustris)* and Mountain Pansy *(Viola lutea).*

Some of the party had lunch in the pub at Tideswell and arrived rather late at Abney Clough (SK/215798) to find the others looking rather pointedly at their watches. We blamed the delay on a flock of sheep and proved it by meeting them again down in the clough. In Derbyshire cloughs are acidic and dales are alkaline, although Parsley Hay was a bit of a mixture. So far this weekend we had managed to avoid seeing bracken, and it was no real pleasure to put right that omission now. *Blechnum spicant* was also added to the list and we saw much more *Oreopteris limbosperma,* plus *Athyrium filix-femina, Dryopteris affinis, D. dilatata, D. filix-mas, Equisetum arvense* and *E. fluviatile.* We were able to find a colony of *E. x litorale* before heading into the more wooded part. Here we saw two colonies of *Phegopteris connectilis* and after walking a fair way up the clough and again in more open country, *Asplenium adiantum-nigrum* and *Gymnocarpium dryopteris.* This brought the total count to 27 fern species plus two subspecies, three horsetails and three clubmosses, together with a hybrid horsetail. My theory that the *Dryopteris dilatata* seems to be of two distinct types, one of which may be *D. expansa,* in Abney Clough, found no favour with the rest of the party.

I should also record that Abney Clough provided our only variety, although we would have preferred not to see it! It was a percristate but hideously depauperate lady fern whose only garden merit would be on the compost heap.

We were slightly too late to see the greater butterfly orchids *(Platanthera chlorantha)* apart from two belated spikes, but the meadows in Abney Clough were full of betony *(Betonica officinalis)* flowering freely.

One feature of the weekend was that the pairs of similar species were for once very well behaved and illustrating their distinguishing features very clearly *(D. carthusiana* and *D. dilatata, P. interjectum* and *P. vulgare, P. aculeatum* and *P. setiferum,* and even *D. affinis* subsp. *affinis* and subsp. *borreri).* Unfortunately the *D. affinis* in Abney Clough rather spoilt this by looking very intermediate.

Torrential rain made farewells brief at the close of a very enjoyable and successful, if wet, weekend.

SOMERSET FERN WEEKEND — 1-2 August. Eighteen members and friends met in Axbridge Square on a sunny Saturday morning. We first visited one of our local nature reserves at the top of Cheddar Gorge, consisting of a long sunken road called Black Rock Drove and a wooded valley called Long Wood. We saw thirteen species of fern in all, the most notable being some fine stands of *Gymnocarpium robertianum* and many large plants of *Polystichum aculeatum.* The latter plants dominate certain areas of Long Wood, rendering *Polystichum setiferum* notable by its almost total absence. We were able to thank Anthony Pigott for some correct identification of *Dryopteris affinis* subsp.

affinis. Asplenium ceterach has been found in this area before but was absent from the rocks and walls where it grew previously.

During the afternoon we visited Waldegrave pool and Priddy mineries, situated on the top of the exposed Mendip plateau. The pond was filled to choking point with *Equisetum fluviatile* and growing at the edge was a small stand of *Ophioglossum vulgatum.* A couple of hundred yards away on a small spoil heap we found the fading remains of *Botrychium lunaria.* The yellowing fronds were quite apparent amongst the dry turf and thyme plants. An investigation of some culverts on the higher ground revealed some interesting forms of *Athyrium filix-femina* with imbricate fronds, but not the plants of *Blechnum spicant* seen on a previous visit.

Bypassing a number of marshy areas well colonised by *Dryopteris carthusiana* we examined some ruined buildings at the mineries. We found these abundantly covered with *Asplenium adiantum-nigrum* (a plant rarely found in this area), with *A. ruta-muraria, A. trichomanes* and *A. ceterach* in lesser numbers. The group spent a pleasant evening at 'The Pheasant' at Wookey, retiring after a fruitful and satisfying day.

The following morning we were joined by another four local members, forming a party of twenty-two in all. (We had decided to combine a south west meeting with the national programme). The morning was spent on Shapwick Nature Reserve on the Somerset Levels. This area of moist peat supports a superb wetland flora; the party was able to see some wonderful examples of *Thelypteris palustris* and *Osmunda regalis.* The former fern grew to a height of two and a half feet in the rhynes and ponds and was abundant in the less wooded areas. The royal fern also reached a fine stature, ancient clumps of fronds reaching six feet. Many of the party remarked on the size and abundance of these species and said the weekend was worthwhile just to see such magnificent specimens. We have the Nature Conservancy Council to thank for their efforts in maintaining the water level in this reserve, in spite of the ever deepening peat excavations in the surrounding areas.

The group returned to the Potts' house for a leisurely lunch and then spent the afternoon looking at the garden and exchanging plants. Many plants in my polypody collection have reached sufficient size to warrant division so I was pleased to distribute pieces of the more unusual varieties.

Christopher and I enjoyed arranging these fern days and would be pleased to see anyone who is in this area and show them the local fern flora. Please contact us if you would like a south west meetings programme in the spring of 1988.

Mary Potts

HARLOW CAR AND BIRK GILL — 15-16 August. The Leeds and District Group was host to the BPS on the weekend of 15-16 August. We all met at the Members' room in Harlow Car Gardens, the head-quarters of the Northern Horticultural Society. (They have recently been given permission to maintain the National Collections of *Dryopteris* and *Polypodium*). After a brief natter and a cup of tea, seventeen of us went for a stroll round part of the gardens, trying to identify some of the fern varieties which are growing in the greenhouses, peat terraces, streamside and limestone gardens; unfortunately we did not get them all identified.

After lunch in the local we went for a walk around the area outside the gardens called Birk Crag. The crags are sandstone and most of the rocky outcrop is at the top of a very steep-sided valley along which runs Oak Beck, a tributary of the River Nidd. We saw lots of the more common ferns but we were on the lookout for a fairly large stand of *Gymnocarpium dryopteris* which I first saw about three years ago. The local council employed some Job Creation or YTS people to clear away a lot of the undergrowth and I have not seen the Oak Fern since. We all looked for it again but sadly it seems to have disappeared. After this we split into two groups, one of them working up a very steep stream bed to look for an old recorded population of *Hymenophyllum wilsonii,* but that too seems to have disappeared.

In the evening most of the party came round to my home to have a browse around the garden and do justice to the refreshments which my wife, Ruth, had prepared.

On Sunday, 16 August, we went a bit further afield to Birk Gill (nothing to do with Birk Crag). The object of this field study was to search again the part of the Gill which the Leeds Group visited last year (see BPS Bulletin **3** (3):84, 1986) and then to continue further along to see if there was anything up towards the moors. We found a couple of plants of *Dryopteris affinis* and also a small stand of a nicely crisped form of *Pteridium aquilinum.*

In the 1986 report there is a mention of *Asplenium ceterach* growing in a wall outside a plant nursery in the village of Healey which was first seen by Dr W A Sledge of Leeds University well over twenty years ago. This is still growing well in the company of *Asplenium trichomanes* and the nursery owner told us that he will take very good care of it and see that it does not become overgrown with some Ivy which is growing in the wall.

One thing which really stood out along the whole of Birk Gill was the size of the *Oreopteris limbosperma.* There were hundreds of plants with fronds up to four feet in length.

Jack Bouckley

DRYOPTERIS STUDY WEEKEND — 22-23 August. Saturday morning found five members in the car park in Dunster, Somerset, for a weekend devoted to the *Dryopteris* complex.

The first site visited was woods between Dunkery Hill and Porlock, a pleasant place where a tumbling stream runs down a lightly wooded valley. Here we found a profusion of golden-scaled male ferns (G.S.M.F.), *Dryopteris affinis* agg. It is safest to use the English name for the group nowadays! We also saw a lot of *Dryopteris dilatata* and one plant of *D. aemula.* After lunch in a nearby café we walked back in the direction of our morning's locality, passing a lot more G.S.M.F. and a fine colony of *D. aemula.*

That evening, when the party had dispersed for the day, the writer went to Simonsbath to re-visit a fern found there on a previous trip. It had been almost destroyed and was unrecognisable. However, the journey was not quite in vain as it yielded a splendid hybrid between *Dryopteris filix-mas* and a G.S.M.F. — probably *D. affinis* subsp. *cambrensis.* If so, it will presumably be a pentaploid.

Somerset seemed to have had a dry summer, and when it rained on the Monday, after the fern meeting was over, it was welcomed by the local gardeners. We had very little rain on the Saturday, and Sunday was a splendid day.

On Sunday morning we assembled in the car park again and later, rendezvoused at Combe Wood with our latest arrival. We failed to find the local variety of subsp. *borreri* which we were looking for. This was unfortunate as the wood is probably going to be "developed" — i.e. destroyed. However, we did find *Dryopteris filix-mas, D. dilatata,* some other *D. affinis* and some rather fine *D. carthusiana.* We then moved on to Wind Down Wood where we found a profusion of different *Dryopteris* species, also fine plants of *Athyrium filix-femina, Asplenium scolopendrium* and a *Polystichum* sp. We looked for *"Polystichopteris"* but without success! However, there were plenty of *Dryopteris dilatata, D. filix-mas* and a great variety of *D. affinis,* including subsp. *affinis,* and numerous hybrids between *D. filix-mas* and some of the golden-scaled male ferns. The writer also found two plants of *Dryopteris "filix-mas",* one probably the parent of the other, which were producing good and abortive spores in approximately equal numbers.

The party then broke up, but two enthusiasts went off to check an old record of *Pilularia globulifera,* while the most aged and decrepit member of the party awaited their company for supper in the Forester's Arms.

H Corley

SOUTHPORT FLOWER SHOW — 20-22 AUGUST 1987

A R Busby

All the fears and uncertainties of previous years became reality in January with the announcement by Sefton Borough Council that there would not be a show this year. Fortunately, many people, both local and countrywide, were determined that the famous Southport Flower Show should not die. Such was their concern and enthusiasm that a public meeting was called and the Southport Horticultural Society formed. A group of businessman within this new society formed a limited company: The Southport Flower Show Ltd, to look after the show's affairs. Although there were some administrative problems, the show took place and was blessed with good weather for the first two days. However, Friday night was a night of heavy rain and thunderstorms. Exhibitors arrived on Saturday morning to find several tents standing in up to four inches of water. Helped by the Merseyside Fire Brigade and Sefton Borough Council, they rolled up their sleeves and, with buckets and dustbins, bailed out the show.

One sad note that overshadowed the show was the death a few days beforehand of Mr John Boocock, Secretary of the show since 1972. He had been ill for several weeks.

In spite of all this, the show was well attended over the three days and exhibitors were assured that there will be a show next year.

My thanks to Jack Bouckley, Ray and Brenda Smith, Brian Russ, Dave Kershaw and Nigel Hall for helping on the Society stand.

The number and quality of entries was virtually the same as last year, with exhibitors paying more attention to correct labelling and better presentation. There is still plenty of room for more exhibitors so I hope more people will enter these classes next year. I would be very pleased to answer any queries from members who are considering showing their ferns.

The judges this year were Mrs H M D Key and A R Busby.

The prize winners are listed below in order of winning.

Class 6 Six hardy British ferns (dissimilar)
B Russ, D J Kershaw (no first awarded) (two entries)

Class 7 Six greenhouse ferns (dissimilar)
D J Kershaw, B Russ (two entries)

Class 8 Three hardy British ferns (species, not varieties)
R J Smith, D J Kershaw, B Russ (three entries)

Class 9 Three foreign ferns (hardy in Great Britain)
D J Kershaw, B Russ (two entries)

Class 10 Three *Asplenium scolopendrium* (three distinct varieties)
B Russ (one entry)

Class 11 Three Polypodiums (three distinct varieties)
W Kirby, R J Smith (two entries)

Class 12 Three Polystichums (three distinct varieties)
W Kirby (no first awarded) (one entry)

Class 13 Three Athyriums (three distinct varieties)
B Russ (no first or second awarded) (one entry)

Class 14 Three Dryopteris (three distinct varieties)
R J Smith, D J Kershaw (two entries)

Class 15 Three Aspleniums (excluding *A. scolopendrium*)
(three distinct varieties and/or species)
H C Shepherd, B Russ, W Kirby (three entries)

Class 16 One British Fern (any kind or variety)
H C Shepherd, A Shellard (four entries)

Class 17 One greenhouse fern
Mrs T Shorrock, Mrs E A Gibbs, D J Kershaw (five entries)

The "Happiland" Trophy, awarded to the exhibitor accumulating the most points in fern classes, was won by Mr Brian Russ of Ormskirk.

OBITUARIES

It is with real sorrow that I have the task of writing two obituaries this year, both on very good friends of many years' standing.

JOHN NOEL BROOKFIELD who died on 10 April this year joined our Society in 1951, the son of John Brookfield, owner of the fern nursery in the same name in Southport, Lancashire. Noel took over the nursery in due course and for many years put up superb exhibits of ferns at the Southport Flower Show, always carrying off the Society's Silver Trophy. His exhibits always included many of our finest fern varieties on a well laid out stand and must have done much to further the fern-growing cult. In recognition of this he was elected to Honorary Membership of the Society in 1977.

Living as we did at opposite ends of the country we had few opportunities for getting together and I always looked forward to our meetings at the Flower Show and our critical appraisal of the fern exhibits, particularly — by me! — the Brookfield ones. However, Noel could always give as good as he got and we both enjoyed the banter. He had a quiet dry humour and a twinkle in his eyes. Many happy evenings were spent in his home, along with his wife and family. To them we extend our deepest sympathy.

FRED JACKSON died in the spring this year at the ripe old age of 86. He joined the Society in 1948 and from the start was an active member at northern field meetings. He lived in Borrowdale in the Lake District and spent his life among his beloved hills which he knew intimately and was associated with the local conservation and preservation bodies. He was an expert cragsman in his heyday and it was a joy to watch him on the cliffs in his search for ferns. In his small garden in Stonethwaite at the bottom of the Dale he had a very choice collection of varieties and the smaller mountain species which he grew to perfection.

Although a simple quarryman for most of his life, he was a very observant man and acquired a great practical knowledge of the geology and the rocks of the Lakeland mountains, and many geologists, both from this country and abroad, would seek out Fred when visiting the Lake District, and listen with respect to what he could tell them. In our Society he was regarded very highly, both in the field and on our Committee, first as a member and later as an Honorary Member and he was also a Vice-President for many years.

Fred was a delightful companion in the field and I, with many others, have spent many happy fern meetings in his company. An extrovert of the first order, evenings in his company in our hotels were joyful occasions. He had a delightful broad Cumbrian accent and a booming voice and, listening to an interesting conversation at the dining table or when leaning on the bar, his exclamations were not a quiet "Really!" or "Is that so!" but a booming "OOOOH-AYE" which startled everyone within several yards. He loved his Malt Whisky — so do I! — and evenings spent in Fred's company were always happy affairs.

In his article in the issue of the *Pteridologist* dedicated to me on the occasion of my 80th birthday (Vol 1 part 2) Fred exclaims "Oh! for the joys of the days that are gone". They were good days, happy days, spent in the company of good friends.

Our deepest sympathies go to his family.

Jimmy Dyce

NEW MEMBERS 1987

(A full list of members was published in BPS Bulletin Vol. 3, part 2)

ATKINSON, Mrs M, 2 Duke Street, Penrith, Cumbria CA11 7LY
BAHIR, A, Kibbutz Givat-Brenner, 60948 Israel
BARCOCK, Miss J M, St Michaels Cottage, Dyffryn Gardens, St Nicholas, Cardiff, S Glamorgan CF5 6SU
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BELL, Mr D, 15 Windsor Road, Gee Cross, Hyde, Cheshire SK14 5JD
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SODEN, Mr D W, 2 Lovett Green, Bishopdown, Salisbury, Wilts. SP1 3HZ
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TIMM, Mr R N, Castle Villa, Church Lane, Minting, Lincolnshire LN9 5RR
VAN DER MEER, Ms J, Gumley Cottage, 17-19 Kew Green, Richmond, Surrey TW9 3AA
WERNER, Mr H, Arum Chine, Berlin 5660, Republic of South Africa
WILLIAMS, Mr C, Madeley Cottage, Newcastle Road, Hough, Cheshire CW2 5JT
ZLOTNIK, Ms A, Lomas Altas 108, Mexico, D.F. 11950, Mexico

MEETINGS 1988

Acting Meetings Secretary: A R Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD. Tel: 0203 715690.

Meetings Sub-Committee: P J Acock, Dr N Hards, J M Ide, P H Ripley.

Saturday 12 March	Annual General Meeting at the Chelsea Physic Garden, 66 Royal Hospital Road, London at 2.00 pm, to be followed by the Spring Indoor Meeting at 3.00 pm.
Saturday 21 May	Day meeting at the Royal Botanic Gardens, Kew, Surrey. Meet at the Lower Nursery, which is adjacent to Kew Palace, at 2.30 pm. Leader: J R Woodhams.
Friday-Sunday 2-3 July	Weekend meeting at Kilndown, Kent. Meet at 7.30 pm Friday or 10.00 am Saturday at the Globe and Rainbow Inn, Kilndown. Leader: P H Ripley.
Saturday 23 July	Day meeting in the Oxford area, meet at 10.00 am at St Hugh's College, St Margaret's Road, Oxford. Leader: D & K Holly.
Thursday-Sunday 4-7 August	North Yorkshire Moors Weekend. Meet 7.30 pm Thursday or 10.00 am Friday at Goathland Hotel Bar, Goathland, nr Whitby, N Yorks. Leaders: A C Jermy & J M Camus.
Thursday-Monday 11-15 August	Long weekend meeting at Lochcarron, Ross-shire. Meet 7.30 pm Wednesday evening or 10.00 am Thursday at the Rockvilla Hotel, Lochcarron. Leader: P H Hainsworth.
Thursday-Saturday 18, 19 & 20 August	Southport Flower Show. The Society's stand will be in tent No 3, competitive fern classes in tent No 5. Leader: A R Busby.
Friday-Sunday 9-11 September	**Weekend meeting in Sedbergh, Cumbria. Meet Thursday 7.30 pm or Friday 10.00 am at The Red Lion, Finkle Street, Sedbergh. Leader: Dr N Hards.**
Saturday 17 September	Day meeting at Reading, Berkshire. Meet 10.00 am in the car park, University of Reading, Plant Science Dept. (entrance in Pepper Lane). Leader: A R Busby.
Saturday 15 October	Autumn Indoor Meeting at the University of York. Meet in the Dept. of Biology Lecture Room at 2.00 pm. Leader: J Bouckley.

For full details of all these meetings and available accommodation please consult your Meetings Programme sheet.

REGIONAL DAY MEETINGS

If you would like details of additional day meetings in the following areas, please contact the local organiser, enclosing a stamped, addressed envelope.

South-west England: Christopher and Mary Potts, 4 Kennel Lane, Webbington, nr Axbridge, Somerset. Tel: 093 472 545.

West Midlands: A R Busby, 16 Kirby Corner Road, Canley, Coventry, CV4 8GD. Tel: 715690.

North-east England: J H Bouckley, 209 Woodfield Road, Harrogate, N Yorks., HG1 4JE.

South-east England: P H Ripley, 12 Farm Lane, Tonbridge, Kent TN10 3DG.

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BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 3 NUMBER 5

1988

Edited by A.R. Busby
and A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY
Officers and Committee for 1988

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President Emeritus: J.W. Dyce

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Trustees of Greenfield Fund: A.R. Busby, Dr N.J. Hards, Dr B.A. Thomas

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges and a spore exchange scheme. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £10, Personal Members not receiving the *Fern Gazette* £7.50; Student Members £5; Subscribing Institutions £12. Family membership in any category is an additional £2. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £1.50 extra to cover bank conversion charges). Airmail postage for all journals – an extra £3.50, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: Crested *Asplenium viride* found by R Smith during the Sedbergh Meeting.)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE BULLETIN OF THE BRITISH PTERIDOLOGICAL SOCIETY

Vol. 3 1988 No. 5

SECRETARIAL NOTES

MEETINGS CARDS - Meetings cards for 1989 are enclosed with this Bulletin to all inland members. Overseas members visiting Britain can obtain them on application to the Meetings Secretary.

COMMITTEE VACANCIES - In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1989. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 27 February 1989.

* *

SUBSCRIPTIONS 1989 - Members are reminded that subscriptions for 1989 are due on the 1st January 1989 and should be paid to the Assistant Secretary (Membership), British Pteridological Society, c/o Dept. of Botany, British Museum (Natural History), Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL - Our journals can be sent by airmail to overseas members, provided they advise the Assistant Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

* *

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY - Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. Due to major changes concerning privileges for affiliated societies the free tickets for the Chelsea Show have been withdrawn. There are two transferable tickets available for all other RHS Shows. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE - The American Fern Journal, a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND - This fund, set up as a memorial to one of our Society's great fern growers - Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy

Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

BINDERS for the BPS BULLETIN - Binders for volumes of the BPS BULLETIN are available from the General Secretary. Attractively produced with red hardboard covers and gold blocked lettering on the spine: only £3.50 each, postage & packing included. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby.

BACK NUMBERS OF JOURNALS - Now those long winter's evenings are upon us there is nothing quite like a little armchair ferning. Over the years I have found that there is nothing better to chase away winter blues than reading through past issues of the Society's journals. Here is a chance to escape to sunnier climes or come to a better understanding of details of the fern world. If you would like to buy back numbers, please write to Mr Acock for a price-list or send £5 for a bumper bundle of assorted issues!

WANTED - If you have finished with copies of the Fern Gazette Vol. 10, Pt. 3 or BPS Bulletin Vol. 1, No. 3, he is willing to buy these back as we have sold out of these parts and many members and subscribers are wanting to complete their collections.

Contact Patrick Acock, 13 Star Lane, St. Mary Cray, Kent, BR5 3LJ with your orders or offers of back numbers.

CONSERVATION ASSOCIATION OF BOTANICAL SOCIETIES

The 1988 A.G.M. of the Conservation Association of Botanical Societies (C.A.B.S.), was held at the British Museum (Natural History) in July. The British Pteridological Society is a founder member of CABS and Clive Jermy and I represent the BPS on the Management Committee. Members resident in the British Isles receive the CABS newsletter 'Plant Press'; issue No. 5 should be included with this Bulletin.

Jennifer Ide

ANNUAL GENERAL MEETING 1988

MINUTES of the 85th ANNUAL GENERAL MEETING held at the Chelsea Physic Garden, Royal Hospital Road, London on Saturday, 12 March 1988 at 2.15 p.m.

IN THE CHAIR: The President, Mrs Gwladys Tonge.

PRESENT: P J Acock, J H Bouckley, A R Busby, J M Camus, M Castellan, J A Crabbe, J Cramp, J W Dyce, M Gibby, N A Hall, N J Hards, R Hibbs, G Hoare, D Holly, J Ide, A C Jermy, M Kingston, S Munyard, S Newton, A M Paul, M H Rickard, B A Thomas, M Vilar, A J Worland, A Willmot, J R Woodhams.

ITEM 1 - APOLOGIES FOR ABSENCE - C R Fraser-Jenkins, M Nimmo-Smith, B S Parris, P H Ripley.

ITEM 2 - APPROVAL OF MINUTES - Minutes of the Annual General Meeting held on 14 March 1987 were read and approved.

ITEM 3 - MATTERS ARISING from those minutes - None.

ITEM 4 - HONORARY GENERAL SECRETARY'S REPORT - Another year has passed and the Society continues to expand. My usual warning about the difficulty of giving firm numbers of members at this time of the year still applies. Last year I was pleased to report an overall increase in members and during 1987 we appear to have improved on last years figures with a further 64 new members. As for 1988, we already have another 20 new members.

Publications
I have little to say about the journals other than what all the editors would wish me to say, that they are dependent on you for copy and that members should not be deterred from submitting articles through lack of experience. The editors will be only too pleased to advise on how information should be presented.

Conservation
Our Society continues to maintain close links with the National Council for the Conservation of Plants and Gardens. Those members who also take an active interest in the N.C.C.P.G. will be aware that ferns now feature more prominently amongst the National Collections. Along with private collections such as my collection of species and forms of *Osmunda* and Martin Rickard's collection of forms of hardy *Polypodium,* Sizergh Castle in Cumbria, Harlow Car Gardens at Harrogate, Savill Gardens, Windsor and Tatton Park, Cheshire now hold public collections.

Our activities with conservation of the British and European flora continue and all members should now have received the Conservation Association of Botanical Societies publication 'Plant Press'.

Spore and Plant Exchange Schemes
During the past year, both these schemes have seen a change in organiser. R F Cartwright felt that the time was right for him to put down the burden of organising the spore exchange after 13 years. This society owes a great debt of gratitude to Dick Cartwright for his unstinting hard work which has made our spore exchange scheme the best.

Due to pressures of business, Richard Lamb, the originator of our plant exchange, has had to relinquish the task of organiser and our thanks are due to him for recognising a need and implementing a scheme that is becoming more and more popular.

Finally, 1987 saw the passing of two great characters of our Society, Noel Brookfield and Fred Jackson. I would add nothing to the obituaries by their good friend, J W Dyce, other than to say we mourn the loss of two very special members.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 - HONORARY TREASURER'S REPORT - The Treasurer distributed copies of his balance sheet and after explaining the Society's income and expenditure for the past year, he was pleased to report that the Society's finances had kept pace with inflation. Dr Thomas's report and balance sheet were approved and adopted by the meeting and the President thanked Dr Thomas.

ITEM 6 - MEETINGS SECRETARY'S REPORT - As this post had remained vacant this year, A R Busby had acted as Meetings Secretary, preparing a meetings programme for 1988. Mr Busby outlined the 1988 meetings programme which, apart from the usual meetings at Kew and Southport includes visits to areas in Kent, Oxford and Reading, Yorkshire, Cumbria and Scotland.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby for taking on the extra work and for presenting an interesting programme for 1988.

ITEM 7 - EDITORS' REPORTS - **'Fern Gazette'** - J A Crabbe reported that work on the 1988 'Fern Gazette' was well in hand with plenty of good copy available. Mr Crabbe also reported that he had received a letter from Professor Reichstein, to whom the 1987 'Fern Gazette' had been dedicated, expressing his appreciation and thanks.

'Pteridologist' - M H Rickard reported that the 1988 'Pteridologist' was well in hand and that he hoped to have the 1988 issue in members' hands in six to eight weeks. Mr Rickard concluded his report by making his usual request to members to submit items for publication.

In reply to comments, Mr Rickard agreed that the basic botany of ferns needs to be included and that there is a need for basic information on ferns and fern growing for new members, however, he has difficulty getting members to write articles on British ferns.

'Bulletin' - Mr Busby commented that he was dissatisfied with the rather 'dry' content of the 'Bulletin' now that it merely reports Society meetings and business, but that he hoped to relieve the text with occasional photographs although lack of space prevented illustrations being included in the 1987 issue.

A C Jermy commented on the importance of the 'Bulletin' as archival material. Mr Busby agreed that the 'Bulletin' should reflect the Society's aims and aspirations in the present day.

It was proposed by A C Jermy, seconded by J W Dyce that all the editors' reports be approved and adopted and this was passed by the meeting. The President thanked the editors for their reports.

ITEM 8 - ELECTION OF OFFICERS AND COMMITTEE - Election of President - The President introduced this item by explaining that she had now completed her three years in office and that it was now time to hand over to someone else.

As is the tradition of this Society, Presidents have been alternately amateur and professional pteridologists, so it was her pleasant duty to present for the meeting's approval the Committee's nominee for the President whose term of office will cover the important run-up to and include part of the Society's Centenary Year: Dr B A Thomas, BSc PhD.

Dr Thomas needed no introduction to members as he has served the Society for fourteen years as Honorary Treasurer and had steered the Society's finances through some of the most difficult years. The Meeting approved Dr Thomas for President and elected him unanimously and was pleased to welcome him to the chair as President.

Election of Vice-President - On taking the Chair, Dr Thomas thanked the meeting for the honour they had given him and he thanked the retiring President, Mrs Gwladys Tonge, for her unswerving commitment to the Society over the past three years. In view of Mrs Tonge's services to the Society, both as a Committee member and as President, the Committee was pleased to recommend to the meeting that Mrs Tonge should be elected as Vice-President. The meeting was pleased to approve and elected her a Vice-President unanimously and Mrs Tonge was pleased to accept.

Honorary General Secretary - Dr Thomas was pleased to note that A R Busby had agreed to serve another year as Secretary.

Honorary Treasurer - It was proposed by A C Jermy, seconded by A M Paul that Dr N Hards be elected as Honorary Treasurer. Dr Hards was pleased to accept and the meeting approved unanimously.

Meetings Secretary - It was proposed by A C Jermy, seconded by A M Paul that Anthony Pigott be elected as Meetings Secretary. Mr Pigott was pleased to accept and the meeting approved unanimously.

The three officers were elected.

Committee - The Secretary reported that Miss J M Camus was due for retirement as the longest serving member of the Committee. Due to Dr Hards and Mr Pigott being elected Officers of the Society there are three vacancies to be filled. Two nominations had been received; it was proposed by A C Jermy, seconded by Dr B A Thomas that Dr T G Walker, BSc PhD FLS, be elected to the committee and it was proposed by A C Jermy, seconded by A M Paul that Mr Patrick Acock be elected to the Committee. Dr Walker and Mr Acock were duly elected. As there were no further nominations from the floor the third vacancy remained unfilled.

The remaining seven members of the Committee were elected 'en bloc'.

ITEM 9 - ELECTION OF AUDITORS - Mr Jack Bouckley and Mr Richard Lamb have notified their willingness to serve for another year and were duly elected with the thanks of the President.

ITEM 10 - ANY OTHER BUSINESS -
a. 1991, Centenary Year Celebrations - The President reminded the meeting that our Centenary Year is only three years away and invited comments from the meeting as to what activities they considered suitable for 1991. Several suggestions were made including a 2-3 day meeting at Kew, a national tour of fern gardens and a return meeting to Kendal for a special Centenary celebration. The President then invited all members to write to the General Secretary with their ideas for 1991.

b. Centenary Fund - The President also outlined his idea for a Centenary Fund which would operate on similar lines to the Greenfield Fund but without its restrictions. The President was also pleased to announce that the Society had received an anonymous gift of £500 from an overseas member. This generous gift would initiate the Centenary Fund which the President would be launching in the near future.

As there appeared to be no further business, the President closed the meeting at 3.00 pm and thanked the members for attending.

A R Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1987

EXTRACTS FROM 1986

ORDINARY ACCOUNT

INCOME

£4710.34	SUBSCRIPTIONS	£6568.38
297.98	INTEREST ON ACCOUNTS	242.83
150.00	BOOKSALE PROFITS	300.00
	OFFPRINT SALES	58.02
	JOURNAL SALES	91.50
	DONATIONS	19.86
	SUNDRIES	12.00
		£7292.59

EXPENDITURE

£1359.00	METLOC - PTERIDOLOGIST	£1404.00
1779.00	METLOC - GAZETTE	1867.00
760.00	METLOC - BULLETIN	756.00
216.77	PRINTING & STATIONERY	537.00
1078.20	ADMINISTRATIVE COSTS AND POSTAGE	1279.25
31.10	SUBSCRIPTIONS TO SOCIETIES	56.10
66.41	MEETINGS COSTS	170.20
15.01	BANK CHARGES	74.25
	SUNDRIES	13.38
		£6157.18
£40.17 DR.	BALANCE FOR THE YEAR	£1135.41
	BALANCE CARRIED FORWARD FROM 1986	2530.10
	BALANCE CARRIED FORWARD TO 1988	£3665.51

PUBLICATIONS ACCOUNT

BALANCE CARRIED FORWARD FROM 1986		£2034.22
SALES - Hardy Ferns	£248.00	
Guide to H. Ferns	382.00	630.00
		2664.22
COSTS - Printing Guide to H. Ferns		326.00
BALANCE CARRIED FORWARD TO 1988		£2338.22

GREENFIELD FUND

BALANCE CARRIED FORWARD FROM 1986	£1983.03
INTEREST	95.47
	2078.50
GRANTS	300.00
BALANCE CARRIED FORWARD TO 1988	£1778.50

LECTURE MEETINGS AND DAY VISITS 1988

SPRING INDOOR MEETING - 12 March.

Retiring President's Address

Gwladys Tonge

My talk scarcely deserves the dignified title 'Retiring President's Address'. It was rather a sharing of the problems and difficulties of an enthusiastic fern lover who is neither a botanist, a specialist or collector, attempting to grow as many ferns as possible in a very small house and garden.

Over a period of thirty years, I have made attempts at specialising in a succession of genera ranging from primroses and auriculas, ivies, campanulas, hardy geraniums and snowdrops to saxifrages and species iris, to name but a few. But for twenty-five of those years ferns have persisted as top favourite specialisation candidate. In spite of this lengthy devotion my garden contains no comprehensive collection of any fern species or category of varieties, either historically interesting or botanically complete

At this point I showed a number of colour-slides, the first of which illustrated the dimensions of my walled garden which is about 38ft x 38ft (11.5 x 11.5m) on three levels. The two top levels are well-filled with climbing roses, honeysuckles, clematis, euonymus, abutilon, trachelospermum, photinia and solanum on the walls. Malus, prunus and sorbus, the only trees small enough, are planted in the middle level with a number of shrubs various berberis, sambucus, cistus, rosemary, lavender etc.

What little space is left is furnished with a mixture of spring bulbs to be followed by lilies and herbaceous plants like campanulas, phlox, penstemons, eryngiums etc., plus alpine beds and crazy paving also carefully planted. Unfortunately, no suitable places for ferns were to be found in those areas.

The sub-soil is sand, and there is a ten foot difference between top and bottom levels, so drainage is rapid.

My next series of slides showed the creation of beds round a raised pond on the concrete floor of a former garage. The smallness of the conservatory, fernery and surrounding fern beds has made photography difficult but a number of slides of individual ferns were shown. These included some varieties of lady fern *(Athyrium filix-femina)* such as 'Medio-deficiens', 'Polydactyla', 'Cristata', and 'Victoriae', *Athyrium goeringianum* 'Pictum', spleenworts such as *Asplenium trichomanes* and its varieties 'Multiceps' and 'Incisum Moule', and *A. marinum*. In the fernery such exotic ferns as *Adiantum, Doodia* and *Platycerium* clothe the walls and floor.

During my recent visit to relatives in Adelaide, South Australia earlier this year, I was unable to visit specialist fern gardens. Nevertheless, I was impressed by the ease with which gardeners, not necessarily pteridophiles, could obtain beautiful ferns from market stalls and garden centres. Slides were shown of a garden in the Adelaide Hills (annual rainfall about 47 inches) whose owner eight years ago purchased "200 feet" of tree fern at 2$ aus. per foot (about £1 per ft.). Amongst trees and shrubs there were at least 100 lovely tree ferns and a few *Platycerium* - yet the owner's ambition was to create an English cottage garden with phlox, campanulas, violas and roses. My last slide of *Rumohra adiantiformis* in a hanging basket in the hall of my own home was a reminder that even in poor conditions, ferns will flourish.

Just three problems remain. With limited space, one should aim for the most special ferns and their best varieties, but these are not always commercially available and when they are offered, can be prohibitively expensive. Fellow fern-growers, while being generous, quite understandably prefer to share their treasures where they can receive treasures in return. Raising ferns from spores requires trial, patience and space; I only have the first two, so (i) where can I find those special ferns? (ii) can I afford them? (iii) how can I create more planting space for ferns outdoors, indoors and under glass while maintaining my interest in other plants?

Thomas Moore, Curator of Chelsea Physic Garden: a talk by Mark Laird
Mr Mark Laird, garden historian and currently Research Fellow at the Chelsea Physic Garden, gave a fascinating talk on Thomas Moore, curator of the Gardens from 1848 to 1887. Thomas Moore is something of an enigma in that, although much of his work is reasonably well documented, it has proved more difficult to learn anything about him as a man. It is known that he was born at Stoke, Surrey, in 1821. He became a gardener at Fraser's Nurseries in Leybridge, and later helped with the laying out of Regent's Park gardens before coming to the Physic Garden in 1848, for an annual salary of £100.

Although his duties were light, he did, in fact, spend much time and energy in his work at the Garden. Between 1846 and 1848 the Physic Garden had been reconstructed under the guidance of Robert Fortune so that when Moore arrived, merely routine maintenance was required. However, in 1854, Moore reported that the Gardens were suffering from disarrangement. This seems to have been an understatement when one hears that one of the items requiring attention was the Robert Miller Herbarium, then being housed in an open-roofed shed!

By this time, the Society of Apothecaries were beginning to query whether they could continue to maintain the Gardens and they were nearly closed in the mid-1850's. The fateful decision was not made, however, and in the 1860's Moore was able to revitalise the Gardens, including the replanting of the medicinal areas, so that their survival as a resource for student apothecaries was assured.

The present Garden owes a number of features to Moore's work. In 1863 a cool fern house was constructed under the influence of Ward, famous for his growing cabinets. It was intended that the house should be fed by a stream so that it could contain bog and aquatic plants as well as ferns. Unfortunately, there is little information on what was planted, or if any ferns have survived, in any way, till the present day. The present Cool Fernery was constructed in 1907, for by this time the original one was in a tumble-down condition. The Wardian case within it was added later, at a date unknown. Moore also constructed large Wardian cases for transplanting seedlings and keeping plants intolerant of the London atmosphere. He also experimented with ventilation as a means of maintaining a more or less constant temperature, using double-glazed Wardian cases.

The 1870's were dominated by the reshaping of the Embankment end of the Gardens when the Embankment road was built, Moore employing a landscape gardener, George Jackman, to do the work.

By the late 1870's the major work in the revitalisation of the Gardens was complete. Moore saw the first women students admitted to the Gardens and in 1878 women visitors out-numbered men.

Despite being busy with his work as Curator, Moore found time to continue with the study of his great love, ferns. In 1848 he published his 'Handbook of British Ferns' and in 1855 'The Splendid Ferns of Great Britain and Ireland'. This latter was illustrated with nature prints. Moulds, using the fern fronds themselves, were made in soft lead and then copper-electroplated for printing. It was a privilege to see some of these exquisite prints at the end of the talk.

From 1857 to 1863 Moore worked on the 'Index Filicum' for the Royal Botanic Gardens. Unfortunately the editor retired in the middle of the work and preparation faltered at the letter 'G'!

A contribution, for which he would probably rather not be remembered, is to the Victorian fern craze, which did so much to denude parts of the British countryside of their ferns His 'Popular Book of British Ferns', became the Baedeker for fern-minded tourists!

Moore was active to the last. Only the day before he died, January 1st, 1887, he dictated his report to the Gardens Committee.

J Ide

KEW GARDENS - 21 May. It was very satisfying to see forty members and guests assemble in the lower nursery for the annual spring meeting at Kew.

As in recent years, we were expertly led by John Woodhams, and we began by inspecting the fern collection in the lower nursery glasshouses. Species from many parts of the world form this collection and it gives us the opportunity to examine closely the habit and form of species with which we are not familiar. We are very fortunate to have the opportunity to see this collection of plants that is denied to the general public.

John very ably pointed out to us various species of interest and which he has personal recollections of in the wild.

Personally, I am always fascinated by the epiphytic *Selaginella* suspended from the glasshouse roof and grown on cork bark wrapped in mosses, and other terrestrial *Selaginella* species grown in the moist comfort of frames, bell-jars and glazed cases. I also observed that while many of the species of ferns are grown in plastic pots, all the members of Polypodiaceae are grown in clay pots. I did not get the chance to raise the matter with John but as far as I know, all polypods are epiphytic so the clay pots presumably ensure free drainage and good aeration.

John led the meeting on to the filmy fern house located immediately behind the Orangery. It has been several years since we visited the filmy ferns and some changes have been made. The large sheets of plate glass which, to a large extent, obscured one's view of the collection, have now been removed. Unfortunately this leaves the filmy ferns near the front at the mercy of the unscrupulous.

Apart from the delicate filmy ferns whose gossamer fronds are bathed in regular clouds of moisture from the humidifier and carefully protected in low light conditions provided by the heavily shaded glass, the corridor of the house also provides a home for potted tree ferns together with *Osmunda, Athyrium* and *Polystichum* on the benches.

The party now moved on to a tour of the shrubberies and plantings to the south of the new 'Princess of Wales Conservatory' to discover the many hardy ferns planted there. Here we could enjoy fine beech ferns *(Phegopteris connectilis),* oak fern *(Gymnocarpium dryopteris)* and its form 'Plumosum', royal fern *(Osmunda regalis)* and several forms of *Polypodium.*

By 4 pm thoughts were turning to the possibility of refreshments. John, as usual had anticipated this need and led the party to the staff accommodation area below the new conservatory, where Joan was waiting with tea, coffee, cakes and biscuits. Fortified for our journey home, we all bade John and Joan Woodhams farewell with our sincere thanks for a day well spent in their company around the Royal Botanic Gardens.

A R Busby

OXFORD - 23 July. The weather forecast for this day promised prolonged showers with high winds, but as the nineteen members assembled in St. Margaret's Road, Oxford for a visit to the garden at St. Hugh's College, we experienced merely breezy conditions with light showers.

Our leaders for the day, Doreen and Keith Holly, introduced us to Mr John Brooke, the Head Gardener, who kindly handed round a pamphlet outlining the history and topography of the College and gardens with details of many notable plants and trees within the grounds.

After passing through the College reception area we found ourselves on an attractive terrace dating from the 1920's and planted with a mixture of herbaceous plants dominated by *Geranium* and *Helianthemum* with a liberal sprinkling of heathers, lavender and prostrate conifers.

The walls of the college buildings supported *Actinidia* and a magnificent *Magnolia grandiflora* carrying several flowers. We moved on across lawns where fine specimen trees graced the sky-line. One fine example admired by all the party was an Indian bean tree, *Catalpa bignonioides,* in full flower. A little further on near the Principal's lodgings, we were shown the remains of some old greenhouses. Here the original sunken water tanks from the greenhouses had been turned into an interesting water feature with irises and water lilies, while cracks in the brickwork provided a home for several fine plants of the maidenhair spleenwort, *Asplenium trichomanes.*

It was in this area that Doreen Holly spotted a large clump of *Polypodium* hidden under shrubs. Several members descended upon it and arguments began as to its identity. The fronds were quite large and it appeared very vigorous; someone suggested that it might be a hybrid but it was impossible to come to any conclusion. It would be worth collecting a fertile frond later in the season to enable a positive identification to be made.

After visiting the remainder of the garden we ended the tour in the part of the garden called 'The Dell'. This small area was devoted to ferns and Mr Brooke displayed two faded photographs of this 'ferny' dell taken around 1930. It showed an area of stone-work planted with many ferns, the focal point being a small fountain. Close scrutiny failed to identify any particular fern varieties but the ferns appeared to be *Dryopteris* and *Athyrium.* The Dell garden today still has many ferns, although the fountain has been removed and stored. The present fern collection consists of several hart's-tongue, *(Asplenium scolopendrium),* with some forms that appeared variegated and many with good crests, many soft shield ferns *(Polystichum setiferum),* lady fern *(Athyrium filix-femina)* and several varieties of male fern *(Dryopteris filix-mas)* and its varieties including 'Lineare', 'Cristata', and 'Cristata Martindale'.

Mr Brooke has continued to introduce new fern plantings including *Dryopteris dilatata* 'Lepidota', *Athyrium filix-femina* 'Frizelliae', *Polypodium vulgare* 'Cambricum' and Mr Brooke explained that it was his intention to continue the tradition of planting ferns in the 'Dell' and to restrict the plantings to British species and varieties. It was now time to say our goodbyes to Mr Brooke and the garden at St. Hugh's College.

Doreen and Keith had kindly arranged a very pleasant lunch for us at the 'Gardener's Arms' in Plantation Road, a few minutes walk from the College. Afterwards we all assembled near the round pond in Oxford Botanic Garden. As the greenhouses are only open between 2-4 pm, Doreen advised the party to visit them first. The small fern house is home to many exotic fern and *Selaginella* species, all enjoying the high humidity and temperatures maintained there. The remainder of the greenhouses are rich with the colour and form of tropical and sub-tropical plants.

After the tour of the greenhouses, the party regrouped for a look at the hardy fern border. This border, which runs along the west side of the greenhouse wall, was largely planted during 1978-79. About 80% of the ferns came from the late Theo. Dyer's collection shortly before his death in 1979. All the ferns are now in their prime and I recommend anyone who wishes to see a comprehensive collection of hardy fern species and varieties to visit Oxford Botanic Garden.

I recall having the lady fern variety 'Plumosum Oxford' pointed out to me during a visit to the garden in the early 1970's, and being told that it had been in the garden for some 200 years. Even then it appeared to be in poor condition and it was generally felt that unless something was done it would be lost. In recent years I have searched for it in vain and I fear that we have lost a fine old variety.

At 4 pm Doreen and Keith kindly invited us to visit their home in Oxford for tea. Here we were able to enjoy their garden and some excellent refreshments. Our thanks are due to John Brooke for kindly allowing us to visit St. Hugh's and our special thanks to Doreen and Keith Holly for their diligent research which resulted in a very interesting day in Oxford and for their kind hospitality.

A R Busby

READING AND TIDMARSH - 17 September. A dull, chilly, overcast morning greeted the 17 members who assembled in car park 13 outside the University of Reading Plant Science Laboratories, Whiteknights. After being welcomed by the Curator of the Botanic Garden, Mr R Rutherford, we toured the grounds and gardens.

The Botanic Garden was founded in 1972 and has recently been renamed after Tom Harris (late Professor of Botany) and whose daughter, Miss Margaret Harris was present. It occupies over eleven acres and is set in what was the home paddock of a Victorian house called "The Wilderness", now demolished, which had formed part of the garden of George, Marquis of Blandford, 5th Duke of Marlborough.

It contains many fine trees from those times and now includes a woodland garden, pond, bog garden, shrub rose border and a fern glade. Amongst the trees and rhododendron bushes we gazed upon many large sarsen stones that once formed a large fern glade. None of the original plantings of ferns were evident, however, we did find many plants of male and broad buckler fern, lady fern, and both the hard and soft shield ferns. Further on near Pepper Lane are recent plantings of several British species and varieties but also included are many other hardy ferns such as *Blechnum chilense, Osmunda claytoniana, Polystichum munitum, Onoclea sensibilis, Matteuccia struthiopteris* and *Dryopteris erythrosora*. A 'first' for those of us interested in horsetails was a planting of Moore's horsetail, *Equisetum* x *moorei*, the hybrid between *E. hyemale* and *E. ramosissimum*.

Mid-morning we made our way to the old campus at London Road. Here we were shown an old fernery that the gardening staff are refurbishing. This glazed conservatory built around 1880 adjoins the old Senior Common Room and has extensive tufa stonework lining the walls, providing pockets and crevices for planting ferns. Although the old heating ducts were evident, the fernery is now unheated, however, several species of ferns have survived and still flourish. They include *Pteris cretica, Cyrtomium falcatum, C. fortunei, Nephrolepis exaltata, Adiantum raddianum, A. capillus-veneris* and several *Selaginella* species. Recent introductions included *Platycerium bifurcatum, Cystopteris bulbifera* and *Woodwardia radicans.* Other plants present included *Asparagus sprengeri, Ficus pumila* and several forms of ivy.

After lingering in that coveted fernery and after firing many questions at Mr Rutherford, we thanked him warmly for the excellent guided tour and made our way to Tidmarsh for lunch.

Lunch was taken at the Greyhound public house and afterwards we made our way across the field to Mr and Mrs Bill Baker's garden at the Old Rectory Cottage. Here, in what can only be described as an idyllic setting alongside the River Pang, was a garden filled with really choice hardy plants, trees and shrubs.

Early September might be considered the wrong end of the season to see this garden, but like all good gardens, there were still plenty of flowers and foliage providing interest and colour. Created by the Bakers around 1957 on a two acre site, two different gardens have evolved: an informal cottage garden with a rockery, and a wild garden beside the Pang, featuring a lake, with spring bulbs, lilies, hostas, ferns and waterside plants.

We discovered many British ferns, both species and varieties, particularly a superb *Polypodium* sp. 'Pulcherrimum', several fine forms of *Polystichum setiferum* and a few varieties of *Asplenium scolopendrium.* Three ferns that were of particular interest were species collected by the Bakers on trips to the Far East: *Onychium japonicum* with its light green, delicately fine fronds, a pretty fern lumbered with the unwieldy name of *Pseudophegopteris levingei* and a fine plant of *Polystichum squarrosum.*

Throughout our tour, Mr Baker was most generous and most of the party left with some treasured momento for their garden. By late afternoon it was time for us to make our way home and we thanked Mr and Mrs Baker for their kindness and generous hospitality.

I would like to express my thanks to Keith and Doreen Holly for all their hard work in putting both the Oxford and Reading visits on the meetings programme, for without their guidance and advice, both visits would have been less successful.

A R Busby

AUTUMN INDOOR MEETING - 15 October. On a dull, chilly day twenty-two members gathered in the Biology Dept. of the University of York to hear an illustrated talk by Dr C N Page entitled "Ferns of the Pacific Fringe".

Dr Page began his talk by describing the areas involved:- the islands of Japan, New Caledonia, the Society Islands, Australia's tropical Queensland, New Zealand and Tasmania. Dr Page explained the reason for the richness of pteridophytes in these parts by referring to their high temperatures and rainfall. He also attributed the presence of ancient ferns such as *Marrattia* and *Angiopteris* to the lack of glaciation in these areas, resulting in more stable conditions over geological time.

Dr Page's slides of Japan and its ferns whetted our appetite but also provided a pause for thought when he explained that although Japan is roughly the same size as Britain they have twenty times as many fern species. No wonder Japanese ferns feature so prominently in hardy fern collections in Britain.

Colour-slides of ferns in New Caledonia showed a rich flora, including many tree-ferns. This island, only the size of Ireland, can boast some forty-five species of conifers alone. Many slides illustrated hill-sides heavily clothed with formations of tree-ferns resembling several hundred parasols. Again Dr Page emphasised how the very primitive species such as *Marrattia* and *Angiopteris* prefer the very poorest of soils often naturally rich with iron, chromium, nickel and cobalt. A clue here perhaps for those of us who have tried to grow these fascinating ferns in the usual potting compost and failed for no obvious reason. It would seem that potting composts are far too rich for them. Dr Page featured many ferns in his slides such as *Elaphoglossum, Oleandra, Gleichenia* and *Blechnum,* with many trees covered with epiphytic ferns such as *Nephrolepis, Humata* and *Davallia,* the latter surprisingly tolerant of full sun and sea-spray.

Dipteris, Pteridium and *Schizaea* were also illustrated and plants of *Psilotum* growing terrestrially, an ally usually seen as an epiphyte.

On now to Queensland and, not surprisingly, *Platycerium* took pride of place. Other less known ferns of that area were illustrated, such as *Belvisia, Paracetarach* and the climbing *Arthropteris,* however, old favourites like *Cheilanthes* and *Doodia* were also shown. It was surprising to see the wide range of habitats for ferns in Australia, many of them appearing far too inhospitable for ferns.

And so we moved on in mind and spirit to New Zealand, another land of tree-ferns and these were quickly illustrated with slides of *Dicksonia,* notably *D. fibrosa* and *D. squarrosa.* Another interesting note for the grower was Dr Page's comment on the paucity of bulbils found on *Asplenium bulbiferum* in its native haunts. Have we in all the years of its cultivation unconsciously selected clones for their production of bulbils?

So finally on to Tasmania where Dr Page was able to draw together the various points of his talk. Due to my interest in Osmundaceae I was particularly pleased to see the king fern, *Todea barbara,* illustrated and I was very interested to hear that it occupies exactly the same habitat in the southern hemisphere as the royal fern, *Osmunda regalis,* occupies in northern latitudes.

Dr Page's talk ended with a lively questions and answers session where members were able to glean much information from his experiences with the Pacific ferns.

Dr Page never fails to convey his talks in a most enthusiastic manner and his keenness and passion for travel and exploration always infects his audience and we extend our thanks to him for providing us with such an interesting afternoon.

Thanks are also due to James Merryweather for initially setting up this meeting and to Jack Bouckley for hosting the afternoon in Dr Merryweather's absence and to members of the University Natural History Society for providing refreshments.

A R Busby

NATIONAL FIELD MEETINGS 1988

CRANBROOK, BEDGEBURY & WAKEHURST -2-3 July

Paul Ripley

Eleven members and guests met on Saturday, July 2nd to visit Angley Wood (TQ 767 362) near Cranbrook, Kent. This wood on sandstone contains an extensive marshy area formed by the partly dammed Turner's Mill pond. In the drier areas *Pteridium aquilinum* was found in abundance, with *Blechnum spicant* and *Dryopteris* spp., but it was in the damper parts that a profusion of *Dryopteris* species could be examined. *D. carthusiana* was abundant, together with *D. dilatata* and excellent specimens of the hybrid *D.x deweveri. Athyrium filix-femina* was plentiful and there were fine plants of *D. filix-mas* and *D. affinis* subsp. *borreri.* We were fortunate to have Anthony Pigott with us, who was able to give his opinion on some characteristically luxuriant *D. affinis* with broad, dark, almost labelliform pinnules as probably a robust variant of *D. affinis* subsp. *borreri. Polystichum setiferum* grows on the other side of the wood but was not seen on this visit. After this, our fourth visit to this site we can confirm the absence of *Thelypteris palustris,* once recorded here but probably lost with the lowering of the level of the mill pond.

In the afternoon we visited Bedgebury Pinetum, where in the small ditches between the impressive specimen pine trees, *Athyrium filix-femina, Blechnum spicant* and *Oreopteris limbosperma* grow to a large size. Two large plants of *Osmunda regalis* grow here, probably planted. Some of the party briefly visited Mrs Philips' nursery in the pinetum, and were able to purchase some choice ferns, including *Blechnum penna-marina,* both crested and uncrested varieties.

Two sites were briefly visited later: TQ 726 314 where *Oreopteris limbosperma* grows in profusion (with *Blechnum spicant)* and TQ 733 329 where masses of *Equisetum fluviatile* adorn a charmingly situated lake.

We were pleased to welcome Geoffrey Kitchener on the Saturday, and Andrew Leonard on the Sunday. Both are new to the Society and we look forward to seeing them again at future meetings. Sunday was probably the wettest day of the year and 15 members and guests were only too glad of the restaurant at Wakehurst Place in which to dry out after the morning's visit to Loders Valley Nature Reserve (TQ 334 300).

The reserve contains most of the classic Wealden pteridophyte flora: *Dryopteris filix-mas, D. affinis* subsp. *borreri, D. dilatata, D. carthusiana, Athyrium filix-femina, Blechnum spicant, Oreopteris limbosperma, Asplenium scolopendrium* and one plant of *Polystichum setiferum. Equisetum arvense* and *E. telmateia* were present, as well as the ubiquitous *Pteridium aquilinum.* Some *Dryopteris* banks in this reserve merit further study, preferably in drier circumstances!

Those members not completely dissolved, visited the beautiful gardens of Wakehurst Place, jointly administered by The National Trust and Royal Botanic Gardens, Kew. Some very fine stands of exotic species are grown in settings unequalled in the South-East, but the highlight of the visit, for me, was the *Dryopteris aemula* growing in quantity on a rocky cliff, and the finding of *Dryopteris affinis* subsp. *affinis,* further indication of the pteridological interest just below the surface in the South-East.

NORTH YORKSHIRE MOORS - 4-7 August

Alison Paul

We could not have hoped for better weather for this week-end centred on the picturesque village of Goathland, just seven miles SW of Whitby; not a drop of rain, calm and with clear blue skies for much of the three days.

On the Thursday evening 17 members and friends gathered at the Goathland Hotel to meet their fellow fern hunters and discuss the programme. Although Clive Jermy and I were the appointed leaders of the meeting, Jack Bouckley had put a great deal of time and effort into producing and supplying us all in advance with a detailed itinerary for the week-end, as well as obtaining the necessary permission from landowners. Thank you Jack.

The following morning 21 of us, including Nan Sykes, a local botanist writing a Flora of the North York Moors National Park, congregated outside the Goathland Hotel. We then reassembled at the other end of the village to explore the woods surrounding Mallyan Spout waterfall (45/824 009). Clive had taken a few of us on a pre-breakfast recce at 6.45 a.m. in these woods, mainly in an endeavour to confirm an old record of *Dryopteris aemula*, a rare species in these eastern parts. We had located a couple of plants at the top of a steep bank in the woods at the foot of a cliff, so were now able to lead the other members of the party directly to this site.

A total of 15 pteridophytes were recorded in the woods: *Equisetum arvense, E. sylvaticum, E. telmateia, Blechnum spicant, Oreopteris limbosperma, Polystichum aculeatum, Pteridium aquilinum, Athyrium filix-femina, Dryopteris aemula, D. dilatata, D.x deweveri, D. filix-mas, D. affinis* subsp. *borreri*, and a *Polypodium* which was inaccessible on a tree, so could not be identified with certainty.

The party now divided, one group traversing the fields to Beck Hole, resisting the temptation to stop for a drink at the inviting looking pub! Instead we went on to explore the banks of Eller Beck, and caught a glimpse of a steam train on the North Yorkshire Moors Railway on its way from Grosmont to Pickering. *Dryopteris dilatata, D. filix-mas, D. affinis* subsp. *affinis, Pteridium aquilinum, Athyrium filix-femina* and *Blechnum spicant* were all found here, plus *Polystichum setiferum* and abundant *Asplenium scolopendrium*, neither of which we had seen earlier at Mallyan Spout. We then straggled back to the Mallyan Spout Hotel for lunch. The rest of the group had explored Carr Wood and Combs Wood and found *Asplenium scolopendrium, Polystichum aculeatum* and the common *Dryopteris affinis* subsp. *borreri*.

Our next destination was Little Beck, about four miles ENE of Goathland. We parked at Midge Hall (45/888 035), and again split into two groups. One, led by Brian Fewster, a local botanist, set off through the woods on the eastern side of Little Beck in a northerly direction. *Pteridium aquilinum, Blechnum spicant, Dryopteris filix-mas, D. dilatata* and *D. affinis* subsp. *affinis* and subsp. *borreri* were seen in abundance without straying from the footpath. There were some very lobed forms of *D. affinis*, and Anthony Pigott and I were frequently left behind while we discussed their possible identity! They were later identified by Christopher Fraser-Jenkins as *D.x complexa (D. affinis x D. filix-mas)*. Further on *Athyrium filix-femina* and *Polystichum setiferum* were found. Brian now provided us with the fascinating reason for the huge piles of shale we had observed. Alum, a wool mordant, was obtained from local shale. The shale was heaped up over gorse and other vegetation which was then set alight. These piles could be up to 100 feet high and when red hot, the alum was precipitated using a strong alkali - usually urine, which was left for collection by the inhabitants of Whitby on their doorsteps! A marshy area beside the path yielded our first sighting of *Equisetum fluviatile* for the week-end, and Richard Unett and Anthony Pigott tried in vain to reach a *Dryopteris* plant, probably just *D. dilatata*, but which we hoped might be *D. carthusiana*, a species which eluded us for the whole meeting. A few plants of *Asplenium scolopendrium* were seen beside the stream.

On reaching the hamlet of Littlebeck, we turned back, this time on the west side of the river, through Little Beck Nature Reserve which is now managed by the Yorkshire Wildlife Trust. *Equisetum arvense* and *E. telmateia* beside the path were the only further species seen that afternoon. Brian (one-time warden of the reserve) then led us off through the thick vegetation until we eventually found ourselves at the footbridge over the Beck about 1/4 mile from the car park. The other group had explored the valley of May Beck in the other direction. Amongst wet alder and ash woods on the alluvial plain were stands of *Dryopteris dilatata, D. affinis* subsp. *borreri* and in places *Polystichum setiferum*. A small man-made pond was searched in vain for *Azolla*.

Saturday dawned and remained a glorious day, hot and sunny, with not a cloud in the sky. Most of us were glad to spend it in the shade of woods at Hayburn Wyke, five miles up the coast from Scarborough. We assembled in the Hayburn Wyke Hotel car park (54/007 968), 22 in number, having lost four from the previous day but gained a further five. We explored the woods, following the path down to the sea, finding *Athyrium filix-femina, Polystichum setiferum, Blechnum spicant, Asplenium scolopendrium, Dryopteris dilatata, D. affinis* subsp. *affinis* and subsp. *borreri, Equisetum arvense, E. telmateia, Pteridium aquilinum,* and another new find for us, *Polypodium vulgare*. *Asplenium marinum* has been recorded along this coastline, but it was decided that these particular cliffs did not look promising enough to warrant a search. Instead we worked up Hayburn Beck, hoping to find *Hymenophyllum tunbrigense,* said to have been found here over a hundred years ago. This record remains unconfirmed, but we did find *Polypodium interjectum* growing on mossy rocks with *P. vulgare*. We came to a rather sheer drop with little in the way of hand or footholds, and it was a case of sitting down and sliding, to be caught by two of our stronger members!

After lunch back at the Hayburn Wyke Hotel, we re-applied our insect repellent (Margaret Harris was testing the relative effectiveness of different brands against the midges!) and returned to the reserve, which is owned by the National Trust and managed by the Yorkshire Wildlife Trust. Four of the group decided to look for fossil plants in a layer of shales examined briefly in the morning; the rest of us went back to the Beck to resume our search for extant pteridophytes, soon finding some very lush *Asplenium scolopendrium, Polystichum setiferum,* and a lovely bank of *Equisetum telmateia*. The beck now forked and Clive suggested we first venture up the righthand branch. Some of us inadvertently formed a breakaway group, following a path through the woods which climbed well above and to the right of the stream, leaving the rest of the party to work up the river bed. The path led us to a road and we turned along here, waiting for some time by the bridge over the beck, since progress upstream would have been considerably slower than on the path. There were some particularly luxuriant plants of *Asplenium scolopendrium* near the bridge and abundant *Polystichum setiferum,* but no sign of any *P. aculeatum*. Eventually we decided to continue along the road, and turned south along the track of a disused railway. We soon came to the point where the track crossed the left-hand fork of Hayburn Beck. The group again divided, some carrying on along the railway path to the hotel, finding *Equisetum sylvaticum,* new for the day. The rest of us climbed/slid down the steep slope to the beck below, at which point Clive and Anthony appeared. They had followed our route, having left Richard Unett to lead the rest of their party on a shorter route across fields to this branch of the beck. We now worked our way downstream, finding nothing more of particular pteridological note, but plenty of deer slots and a beautiful stand of *Campanula latifolia*. The going was not easy, and eventually we struck up the slope and across the fields to join the rest of our fragmented party at the hotel.

The next day our first site for study was a piece of moorland roadside between Egton Bridge and Rosedale Abbey which Jack Bouckley had previously noted as worth investigating but had no opportunity to do so. As expected, the ferns in this exposed place were very much smaller than in the woodlands so far visited, and it was interesting to compare such tiny plants of *Athyrium filix-femina, Dryopteris filix-mas* and *Oreopteris limbosperma*. Other fern species represented on the banks with *Calluna vulgaris* and *Vaccinium myrtillus* were *Blechnum spicant* and a few plants of *Dryopteris dilatata*.

From here we moved on to Rosedale Abbey, where people were reshuffled so as to reduce the number of cars taken on to Northdale Farm (44/724 979) along a gated road. A slightly smaller group of us set off to Northdale Beck, though we were now joined by another local botanist, Ann GreatRex, and later in the morning by Richard Lamb. *Dryopteris filix-mas, Athyrium filix-femina* and *Pteridium aquilinum* were the first species to be found, at the foot of a drystone wall. We continued for a while across the fields before diverging to the left and scrambling down to the beck. Following upstream *Oreopteris limbosperma* was abundant along with *Athyrium filix-femina. Dryopteris dilatata, D. affinis* subsp. *borreri* and *Blechnum spicant* were also present, but the most exciting finds were the attractive *Phegopteris connectilis* on the shaded bank and the graceful *Gymnocarpium dryopteris* at the foot of an oak tree, both new records for this particular area. The group now divided to explore different branches of the beck, all treading very carefully as the rocks were extremely slippery. Nothing more of particular note was found before we made our various ways back to Rosedale Abbey for a late lunch.

It was a lovely drive over the moorland road to Hutton-le-Hole, thence to Helmsley and Rievaulx Abbey, where we were joined by Stephen Munyard and again transferred into fewer cars to go on to Tylas Farm (44/566 879). We followed Deep Gill to the west, finding abundant *Equisetum palustre* in the wet meadow, and also *E. arvense* and *Athyrium filix-femina*. Climbing the slope to the bridleway along the densely wooded Birk Bank, we found *Dryopteris dilatata, Blechnum spicant, Pteridium aquilinum* and a lot of very small fronds of *Phegopteris connectilis* under the birch and hazel trees. Beside the path through the conifers was more bracken, *D. dilatata* and also *Dryopteris affinis* subsp. *borreri*, which led to further discussion on the distinguishing features of the subspecies of *D. affinis*.

At this point Philip Lucas proposed a group photo be taken before the party divided, half to return along the bridleway to the cars, the rest of us to attempt to return along Deep Gill itself. Had we known what this would entail, Clive might have taken this route alone! For much of the time we were fighting our way through very prickly spruce trees, or repeatedly crossing the river over fallen trees; one particularly slippery log almost defeating some of us. While pausing for breath or to straighten up, we recorded *Athyrium filix-femina, Dryopteris filix-mas, Blechnum spicant* and *Polystichum aculeatum. Polypodium vulgare* was espied on a rotten log beside the gill, and there was a particularly handsome stand of *Equisetum telmateia* which we had to plough through. It was with great relief that we finally emerged into the open. The party reassembled at Rievaulx Abbey and farewells were said at the close of a most enjoyable week-end.

By way of a postscript it should be recorded that Pat Acock had a successful pre-breakfast hunt on the Monday morning for *Equisetum hyemale* at Mallyan Spout, previously recorded there by James Merryweather.

LOCHCARRON, WESTER ROSS - 11-15 August

Peter Hainsworth

A total of 20 members and interested persons gathered in Lochcarron to sample the spectacular scenery and pteridological wonders of Wester Ross. Thirty-five fern species and their allies were seen, so to save repetition a list is given at the end.

The first day (Friday) dawned promisingly and we decided to tackle a steep rocky scree near the summit of Fuar Tholl, (c. 3,000 ft.) a considerable test of fitness as the ascent started from near sea-level. There we saw the alpine lady fern *Athyrium distentifolium*, flourishing in large numbers. At the top of the scree were numbers of a smaller, more spreading *Athyrium* with round sori, provisionally identified as "a sort of *A. distentifolium*". Steve Munyard found a quillwort in a small pool, and everybody found three sorts of clubmoss and lots of parsley fern. Stags horn clubmoss remained elusive. Also found were mountain fern, mountain male fern, hard fern, beech fern, buckler ferns, Wilson's filmy fern and others to a total of 19 ferns and allies.

Almost unnoticed, mist descended and a slight drizzle of rain set in so we decided to return. Rain steadily increased to a full downpour, turning small streams into torrents and boots into squelching misery.

Dried out (with many thanks to our various hosts), and partially recovered, we spent the next day scrambling up and down two rocky gorges in a large limestone area at Kishorn. Ferns were particularly luxuriant in the first, Alt Mor, including hart's tongue, rather scarce so far north, and enviable specimens of *Dryopteris affinis* subsp. *cambrensis*. Pamela Belsham turned up *D. aemula*, a plant of strangely erratic distribution here, sometimes occurring in hundreds with odd intervening plants, often in unexpected habitats. Many large hard shield ferns, lady ferns and buckler ferns were hanging from the rocky shelves and cliffs.

After lunch we climbed up the next gorge at Glasnock, a series of cascades under silver birches, landscaped to perfection by nature. Ferns were much as before until we reached the 1,000 ft. contour and diverted northwards on to spiky limestone pavement, where holly fern and green spleenwort were present in great numbers. Steve Munyard almost tripped over a moonwort (the only one). Another member found a frog orchid, and several helleborine plants were spotted, unflowered, but probably the rare dark red helleborine which grows here. To fill the photographers' day we found grass of parnassus in a boggy area at the foot of the hill. The days count of pteridophyte species came to at least 20.

Sunday was dull and drizzly, interspersed with heavier outbursts of rain. So we elected to wander round my garden where shelter was readily available in the greenhouse or under the gigantic *Gunnera manicata*. It was considered that my puzzling buckler ferns leaned in the main to *Dryopteris dilatata* with one or two *D. expansa* and one *D. carthusiana* (imported). I need not have envied the *D. affinis* subsp. *cambrensis* yesterday, there was an equally fine one in the garden! Grateful thanks to Martin Rickard for identifying a number of mystery plants from BPS spores, including to my great surprise two *Cyathea*.

A member asked how many species were in the garden. I had to confess ignorance. A tot up later from garden and file revealed about 30 natives, 30 hardy foreigners and 20 mixed half-hardies and frilly freaks, (not counting the wood horsetail and quite offensive common horsetail). Hopefully something of interest for everybody. Halfway through the morning we all squeezed into my little cottage for refreshments kindly provided by my wife. About 7 were expected, 14 turned up. Where the extra cups came from I still do not know.

The afternoon was rather a disappointment. Firstly we found the level-crossing gates had recently been padlocked and no one was available with a key, which meant adding another mile to our walk in uncertain weather. On arrival at Allt a Chonais we found the river far too full for boulder hopping and all we saw by the river was Wilson's filmy fern on a waterside boulder. So we had to settle for a walk through the woods, ably misled by myself at one point, to see the Caledonian pines. Rather unproductive fernwise, but perhaps it was as well we did not linger, for rain began to fall more insistently as we reached the cars.

There were only four survivors by Monday morning, so we spent it doing a few small sites around Lochcarron. First to Slumbay Island (well, at high tide anyway) to see sea spleenwort. We also found *Polypodium interjectum* and quite a few other things in a very small area of cliff here. Thence to the waterfall at the end of the village in another cliff-sided narrow gorge which produced about a dozen species. Lastly to the south side of Loch Carron to see the enormous stand of *Dryopteris affinis* subsp. *cambrensis* which must have numbered thousands of large plants on a steep bank above the road. Even the ubiquitous bracken was overwhelmed!

We hope it will be possible to plan more expeditions to the NW of Scotland.

FERNS AND ALLIED PLANTS FOUND IN THE LOCHCARRON AREA - 11-15 August

Alpine clubmoss	*Diphasiastrum alpinum*
Alpine lady fern	*Athyrium distentifolium*
Beech fern	*Phegopteris connectilis*
Black spleenwort	*Asplenium adiantum-nigrum*
Bracken	*Pteridium aquilinum*
Brittle bladder fern	*Cystopteris fragilis*
Broad buckler fern	*Dryopteris dilatata*
Common polypody	*Polypodium vulgare*
Common horsetail	*Equisetum arvense*
Fir clubmoss	*Huperzia selago*
Golden-scaled male fern	*Dryopteris affinis* subsp. *affinis,* subsp. *borreri,* subsp. *cambrensis*
Green spleenwort	*Asplenium viride*
Hard fern	*Blechnum spicant*
Hard shield fern	*Polystichum aculeatum*
Hart's tongue fern	*Asplenium scolopendrium*
Hay-scented buckler fern	*Dryopteris aemula*
Holly fern	*Polystichum lonchitis*
Lady fern	*Athyrium filix-femina*
Lesser clubmoss	*Selaginella selaginoides*
Maidenhair spleenwort	*Asplenium trichomanes*
Male fern	*Dryopteris filix-mas*
Moonwort	*Botrychium lunaria*
Mountain fern	*Oreopteris limbosperma*
Mountain male fern	*Dryopteris oreades*
Northern buckler fern	*Dryopteris expansa*
Oak fern	*Gymnocarpium dryopteris*
Parsley fern	*Cryptogramma crispa*
Quillwort	*Isoetes* sp.
Sea spleenwort	*Asplenium marinum*
Wall rue	*Asplenium ruta-muraria*

Western polypody	*Polypodium interjectum*
Wilson's filmy fern	*Hymenophyllum wilsonii*
Wood horsetail	*Equisetum sylvaticum*

SEDBERGH, CUMBRIA - 9-11 September

N J Hards

Altogether 16 members and friends attended all or part of this meeting, and two more visited us on Friday evening. It was particularly pleasing to see a good mix of familiar and unfamiliar faces, four being people I met on my first meeting in 1978, some others were long standing members and some fairly new to the Society. Most of the party assembled for a very convivial evening in the Red Lion on Friday. I had been trying to persuade Matt Busby for some time that we should revisit Sedbergh, as the last trip there was in 1974. Personally I was looking forward to the excellent Marstons ale and ample food as well as the fern hunting and all of these were fully up to expectations.

I was proudly showing off a very good crested "scolly" I had found earlier in the day near Ingleborough when Norman McLeod and his wife introduced themselves. He asked if we could try to identify some fronds he had brought with him. None of us were prepared for the two sacks of treasures, all extremely well-grown and some exceptionally large. Many matched my recollection of illustrations in old books but precise names were beyond us. Particularly impressive was a sterile *Polystichum setiferum*, possibly a 'Pulcherrimum'.

We spent Saturday just north of Sedbergh, commencing with Cautley Crags. Starting from the road, there is a climb of over 750 ft, some of it very steep. Fortunately many of the ferns can be seen without making the full ascent, and the lowest gorge is quite accessible. The party divided up and in the lower areas we were able to see in addition to the *Pteridium aquilinum* which clothes the hillside, *Cryptogramma crispa* (on the screes), *Athyrium filix-femina, Dryopteris filix-mas, D. affinis* and *D. oreades*. The *D. affinis* was mostly subsp. *cambrensis*, but also another subspecies which I identified at the time as *affinis* but on reflection now think is probably *borreri*. Unfortunately at this time of year most of the fresher fronds had no spores and the other characteristics do not seem so well-developed. Fronds were collected and hopefully the Natural History Museum staff will be able to help.

Deeper into the gorges we also found *Asplenium trichomanes, A. adiantum-nigrum, A. viride, Cystopteris fragilis, Polypodium vulgare* and *Polystichum aculeatum*, plus one patch of *Hymenophyllum wilsonii*. Around the second waterfall we found *A. trichomanes* subsp. *trichomanes, C. crispa, P. vulgare* and *H. wilsonii* suggesting acidic conditions, and nearby *A. viride, A. trichomanes* subsp. *quadrivalens, C. fragilis* and *P. aculeatum* suggesting basic conditions. The slaty rock is mainly acidic but the stream follows a line of weakness where there are some mineral veins which probably contain some calcium. On the sides of the gorge at this point we also saw *Blechnum spicant* and *Selaginella selaginoides*.

Some of the party then braved the worst and steepest part of the climb and found *Oreopteris limbosperma, Dryopteris dilatata, Phegopteris connectilis* and *Huperzia selago*. The *D. dilatata* was growing as small crowns connected by long stolons, as it commonly does on the high hillsides in this area, but from experience it reverts to type in the garden while still producing some stolons. I had also found *Diphasiastrum alpinum* here a few years ago, but all we saw this time were a few tiny shoots 1-2 mm long, which looked very unconvincing. On the way down we had a cursory look for *Lycopodium clavatum*, but without success.

In the afternoon we visited a pair of low limestone hills, Stennerskeugh Clouds and Fell End Clouds. My intention was to walk up between them and search both thoroughly but the weather had deteriorated to a fine drizzle blown on a strong wind, with visibility below 50 yards. The hills are a mixture of large boulders, scree and steeply sloping pavement, and some of the party sensibly headed back to the cars after seeing *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes, A. viride* and *C. fragilis*. The rest also soon found *A. filix-femina, D. filix-mas, D. submontana* and *P. aculeatum*. In a steep gully I then found a very large *Polystichum lonchitis* and had some difficulty in rounding up the party. The frond I collected was 15 inches long and I eventually found 20 or so more plants of similar or larger size all in the same area. Although the weather was deteriorating fast we continued to the top and added *Gymnocarpium robertianum* and *Polypodium interjectum* to the list. We then discovered that Ray Smith was missing and after checking back at the cars sent out a search party. In the meantime he returned clutching a splendid crested *A. viride* with plenty of roots and spores; all was forgiven!

On Sunday morning we visited Sizergh Castle, where Malcolm Hutcheson, the head gardener, had arranged to show us the ferns. This National Trust garden has many choice species and varieties, and houses some of the National Collections. We were lucky to see the back-up collections in the private area as well as the plants in the gardens. Unfortunately they are having trouble getting all the varieties named and perhaps some of the knowledge has been lost.

British species included *Asplenium ceterach, Dryopteris carthusiana, Osmunda regalis* and *Thelypteris palustris* not otherwise seen on the meeting. Particularly striking varieties included *A. scolopendrium* 'Crispum', 'Bolton's Nobile' and 'Fertile', and many other choice muricate, cristate and grandiceps forms; also *O. regalis* 'Cristata' and 'Corymbifera' and crested forms of *D. affinis*. I believe 'The King' is not a legitimate name but it aptly fits the really choice broad-fronded form which contrasts well with 'Cristata Windermere' and several 'Polydactyla'. Foreign species included *Athyrium otophorum* var. *okanum, Dryopteris wallichiana, D. erythrosora* and *D. cystolepidota*. The last two are often indiscriminately called *D. erythrosora* in cultivation. Two large relatives of the beech fern are a problem – one was *Phegopteris hexagonoptera* but the other was supplied as *P. 'pozei'*, probably an incorrect name but what is its true identity?

Our final visit of the afternoon was to Hutton Roof, a favourite haunt of the Society. This limestone hill is well-wooded in places and has patches of acid soil. For the record, we saw *Asplenium ruta-muraria, A. trichomanes, A. scolopendrium, A. viride, Athyrium filix-femina, Dryopteris affinis* subsp. *affinis* and subsp. *borreri, D. dilatata, D. filix-mas, D. submontana, Gymnocarpium robertianum, Oreopteris limbosperma, Polypodium interjectum, P. vulgare, Polystichum aculeatum, Pteridium aquilinum,* and *Cystopteris fragilis.*

In one respect at least we were lucky. The weather was good and the views of Ingleborough, Morecambe Bay and the Lake District were superb. This marked the end of a very enjoyable meeting on which we saw 23 fern species and several clubmosses in the wild, plus both subspecies of *A. trichomanes* and all three subspecies of *D. affinis*. Surprisingly we saw no horsetails.

REGIONAL MEETINGS 1988

WEST MIDLANDS

A R Busby

'Welcome to Spring' Flower Show, Solihull - 16-17 April. As in previous years, The Solihull Horticultural Society kindly allowed us space to display B.P.S. literature and plants in the hope of attracting new members to the pleasures of growing ferns. Although none were forthcoming, I still think it is important to provide the gardening public with the opportunity to see ferns and learn of the various activities of our Society.

Many visitors stop to ask questions concerning their fern growing problems, usually a 'sick' maidenhair growing close to a gas-fire or cooker in the kitchen!, and to comment on the ferns exhibited.

My thanks to Ray Smith and my young son Matthew for spending time with me on the stand.

Alan and Valerie Ogden's Open Day - 12 June. After several chilly, wet days, Alan and Valerie's open day was blessed with clear blue skies providing a full day's June sun. It was obvious that since their last open day in 1983, they had been very busy re-arranging borders for their ever expanding fern collection.

Alan's comprehensive collection of hardy ferns included several species rarely met with in a garden, for example *Polystichum andersonii, P. vestitum, Dryopteris varia* and *D. crassirhizoma*. Other foreign *Dryopteris* in his hardy collection include *D. marginalis, D. erythrosora, D. fuscipes* and *D. hirtipes,* while British *Dryopteris* are represented by *D. filix-mas, D. affinis* and their varieties, *D. remota, D. oreades* and *D. dilatata* including 'Lepidota'.

Alan also has his 'crispy' collection represented by *Dryopteris filix-mas* 'Crispa-cristata', *D. dilatata* 'Crispa Whiteside', *D. affinis* Crispa-congesta' and *D. oreades* 'Crispata'. In addition to his hardy fern collection, Alan has two glasshouses crammed with all sorts of plants including species of *Adiantum, Pellaea* and *Polypodium.*

Our warm thanks to Alan and Valerie for allowing us to share their garden on such a lovely day.

Ashwood Nurseries and Clive and Doreen Brotherton's Garden - 18 September. A chilly but bright day greeted the few local members who assembled at Ashwood Nurseries near Kingswinford, Staffordshire. This nursery, noted for its quality plants, frequently offers items difficult to obtain elsewhere so it is always worth a visit. Shortly after arriving we were offered the chance to tour the propagation area by the chief propagator, Mr Philip Baulk. Apart from the usual production of popular plants from seed, a large part of the area is given over to the development of the Ashwood Strain of *Lewisia* and it was most interesting to see how the crosses are made and the desired colours and forms selected.

After lunch we made our way to Clive and Doreen Brotherton's garden at Sedgley near Dudley, where 16 local members had gathered. Apart from ferns, Clive and Doreen have a passion for alpines, and in addition to those planted in their large scree garden, they have a lot in cold frames, many of which they have raised from seeds acquired through the Alpine Garden Society seed exchange. Their garden also boasts several fine trees, shrubs and climbers. One notable climber that took the fancy of several members was a fine plant of *Clematis versicolor* that Clive has raised from seed from the AGS seed exchange, its small pendant flowers delicate pink with a white tip.

But it was Clive's ferns that we had been particularly looking forward to seeing. His hardy ferns had already whetted our apetite, especially the small species such as *Cryptogramma crispa* and the *Asplenium* species that lend themselves to scree and rockery gardening.

In a heated greenhouse, Clive had a wide range of sub-tropical ferns such as *Platycerium* and *Adiantum*, however, it was the *Cheilanthes* and related genera that really made us stop in our tracks. Displayed throughout their heated greenhouse, garage and home are superbly grown examples of the lovely genus *Cheilanthes*. The collection included *C. alabamensis, C. argentea, C. bonariensis, C. californica, C. cucullans, C. cuneata, C. coriacea, C. distans, C. hirta* and *C. h.* 'Ellisiana', *C. integerrima, C. maderensis, C. multifida, C. myriophylla, C. notholaenoides, C. trichomanoides* and *C. tomentosa*. I doubt if there is another grower in Britain with such a comprehensive collection of these most attractive plants. Clive also collects *Pellaea* and related plants, including *Pellaea andromedifolia, P. mucronata, P. ternifolia* and *Mildella intramarginalis* var. *serratifolia*.

Mid-afternoon the time came to turn our attention to the large buffet that Doreen kindly provided for us, after which we returned to the garden. Clive's garage held boxes and tins of various compost additives for his home-made growing medium, however, the one component missing was 'ingredient X' that enables Clive to obtain such good results with a genus that has proved so difficult to me and other growers.

Our thanks to Clive and Doreen Brotherton for providing us with such a stimulating afternoon and kind hospitality.

Matt and Margaret Busby's Illustrated Wine and Cheese Party - 7 October. Once again local members kindly responded to our invitation to gather at the Westwood campus at Warwick University for an autumn get-together. The mixture was very much as in previous years, with slides of meetings both local and national, and of ferns and other hardy plants. One very pleasing feature of this year's evening was the large selection of ferns brought along for other members to add to their collection. I am sure that everyone went home with something for their garden.

My thanks to Margaret and Matthew junior, and to Janet, Ken and Sarah Lowe for all their help in setting up the evening's eats and drinks.

LEEDS & DISTRICT

The Leeds & District Group have enjoyed a successful 1988 as can be seen in the following reports by various leaders. Apart from these field study trips we have also been very fortunate during the year in having had three fairly local National events within easy reach.

We do welcome any B.P.S. member who is on a visit to Yorkshire to join in with us on any of our field events - or just for a chat for the less energetic. Most of our activities are confined to Yorkshire, but on the odd occasion we have been known to stray across the border to the west. If you are interested just ring for details from either Richard Unett at Bradford (0274) 673052 or myself at Harrogate (0423) 66948.

Good fern hunting in 1989.

Jack Bouckley

GRIMSWORTH DENE - 18 June. We met at Hardcastle Crags Lodge car park for the third of our trips in Calderdale led by Mr Frank Murgatroyd of the Halifax Scientific Society. This year we were pleased to be joined by two other H.S.S. members and also Neil Timm, a new B.P.S. member from Lincolnshire.

After a quick look at the lodge garden to see the four beautiful plants of *Osmunda regalis* there, we checked the walls for the many plants of *Cystopteris fragilis* which were growing there on our last visit. To our dismay they were nearly all dead, having been sprayed with weedkiller. Frank, who had already witnessed the destruction, said that he had written a letter of complaint to the National Trust. A few plants still remain however, together with *Asplenium trichomanes* and we hope the colony will be restored to its former glory.

We then turned left up the track to Grimsworth Dene. Once into the meadow at the top of the track we commenced our search for *Botrychium lunaria* which Frank had seen in previous years. Whilst the meadow looked just right - not too heavily grazed and with a variety of flora including heath bedstraw, pignut, mouse-ear, birdsfoot trefoil, two speedwells and the unusual forget-me-not, *Myosotis discolor*, there was no sign of the moonwort. We proceeded through the beech wood which supported few ferns. Rather more were to be seen on the embankment of the old mill race, with both red- and green-stemmed *Athyrium filix-femina*, abundant *Dryopteris dilatata*, one *Asplenium scolopendrium*, some plants of *Oreopteris limbosperma* and fertile *Blechnum spicant*, one plant of which bore a single birfurcating frond. There was also some speculation about a strange looking horsetail growing in a wet patch but it was taken to be an atypical *Equisetum arvense*.

Once through the woods we stopped in a steep-sided meadow for lunch, followed by another hunt for the elusive moonwort. However, we were again disappointed in our search but delighted by a patch of both pink and white varieties of ragged robin growing close to *Equisetum sylvaticum*.

On leaving the woods we followed the track to the path up to Lumbutts waterfall where we hoped to see *Phegopteris connectilis*.

Having found one *Dryopteris filix-mas* we searched the banks of the stream for moonwort but were again unlucky, instead finding many small plants of *B. spicant* and higher up abundant stretches of bracken *(Pteridium aquilinum)*. A frond from a conspicuous clump of *D. affinis* was taken to try out the BM Fern Crib, but no definite conclusion was reached. The frond was sent to the British Musem (Natural History) and proved to be subsp. *cambrensis*. Having found our *P. connectilis* at the waterfall but no sign of the *Polystichum* which once also grew there we retraced our steps in fierce heat and with many midges to the track back to Hardcastle Crags. Here another rather obscure clump of *P. connectilis* was growing amongst the many plants of *O. limbosperma* and several *D. affinis* subsp. *cambrensis* and subsp. *borreri* which lined the path.

Back at the crags car park we determined not to let the moonwort elude us totally by examining another site not far away at Norland Moor near Sowerby Bridge. Having parked on a grassy triangle in the road we searched all the nearby verges and sure enough, there it was - several quite large plants absolutely full of spores - the first time we had seen it as a group. What a magnificent end to a thoroughly enjoyable day. Well satisfied, we retured to Elland to celebrate with a cup of tea.

Margaret Rothwell

GUNNERSIDE GILL – 16 July. Anyone who doubted the success of pteridophytes as a group should have accompanied the twelve members and guests, with one dog, on their hastily-organized field trip on this Saturday in July; it replaced a cancelled meeting, and was led by Richard Lamb. For on that trip, in many habitats, ferns were revealed as the dominant plant representatives growing almost to the exclusion of anything else; altogether 15 species of ferns and three horsetails were recorded. The weather stayed dull all day, with light intermittent rain beginning mid-afternoon, increasing in intensity as the cars came into view on the final downward stretch.

The party assembled in the picturesque Swaledale village of Gunnerside, North Yorkshire, and set off northwards following the course of Gunnerside Gill, a tributary of the River Swale. This whole area has seen intense lead mining over the centuries, ceasing finally in the 1880's, and the first spoil heap from a level (horizontal entrance into a mine, also called an adit) was soon reached. It had been predicted that the moonwort *(Botrychium lunaria)* would be found, since spoil from lead mines has apparently been cited as a characteristic habitat in the region, but alas, neither here nor further up the valley could any be detected despite very close scrutiny. Entering a wooded section, the more common ferns were plentiful, and being sheltered by both dale and trees, displayed luxuriant growth: here were *Dryopteris filix-mas, Athyrium filix-femina* (both red- and green-stemmed varieties) and *D. dilatata* on all sides, a few *Polystichum aculeatum,* and the odd *D. carthusiana* particularly under silver birch. Interestingly, *Blechnum spicant* also made an appearance in this predominantly limestone area, although under tree cover failed to present any fertile fronds. *Polypodium vulgare,* however, admirably displayed its epiphytic nature on two moss-covered dead tree-trunks.

Back into the open, the first of the large dressing floors was encountered, where the material from the mines was sorted first by hand and then hydraulically after crushing; it was very evident that despite the passage of 100 years or so, colonization of the spoil, particularly the fines (tailings) was negligible or absent. This site, in reasonable state of preservation, retained a fine set of bouse teams (collecting bays for the ore brought from the mine by rail), wheel pit and tail race. A slow-worm, discovered on one of the dumps, provided a fascinating interlude especially for the younger members, before retreating to safety among the rocks. Wall ferns were not to be found in any of the ruins, or indeed in the other buildings connected with mining that were examined. *D. affinis* subsp. *borreri,* however, was seen in abundance along the stream banks and makes a spectacular visual display earlier in the year with its bright golden colour as the new fronds unfurl. A couple of frogs were also enjoying the scenery!

At this point, the Gill was forded (literally), and lunch partaken of on the west bank before setting off, suitably refreshed, to the foray. *Cystopteris fragilis* really finds its niche in old mine levels, and the Sir Francis Level (named after Sir Francis Denys, a well known local mining entrepreneur) proved no exception, the shelter, shade and moisture combining to give fine fronds of good length. *Phegopteris connectilis,* a fern commonly supposed to prefer woodland, here grew in the open, albeit sheltered to some extent by boulders, while numerous *B. spicant* sported fertile fronds, obviously in much more congenial surroundings than in the woods. *Oreopteris limbosperma* was plentiful, indeed in parts being the dominant species, preferring situations without shade.

Examination of a second dressing floor again failed to reveal any moonwort, but the beautiful *Equisetum sylvaticum* more than compensated; to this must be added *E. arvense* and *E. palustre* growing nearby.

Climbing slowly up the valley side, the party divided, some returning to their cars, the remainder continuing to a locality previously noted by the leader as being of particular interest. It should be mentioned that the hillsides, replete with their full complement of *Pteridium aquilinum*, were also covered with bluebells presenting an unusual and breathtaking sight in May/June. Eventually the group arrived at their goal: a limestone "mini gorge", complete with waterfall, on Botcher Gill, a tributary of the main stream, where the vertical joints, eroded by water action, provided cool and shady passages which ferns colonized gratefully. At last, *Asplenium ruta-muraria* growing naturally for once (as opposed to its more common habitat, walls!), also *A. trichomanes* and *A. viride*, rather small and few in number. Here too grew magnificent male ferns, *P. aculeatum* and polypody, with struggling rowan and juniper. A delightful spot, probably not often visited, and well worth the extra effort to discover its little "secrets"; on a hot day, some might well have lingered . . . . .

A gradual descent brought the expedition back to the village and shelter, just as the heavens opened. Surprisingly, no hart's tongue had been found, nor anything rarer than *A. viride*, but if success can be judged by the members' enjoyment, then it had been a most successful day.

R P H Lamb

SOUTH-EAST

Paul Ripley

Ide Hill and Great Comp Garden - 14 May. In near perfect weather, 12 members and guests met at Emmett's Garden, Ide Hill. This is one of the highest gardens in Kent, lying on the Greensand ridge some four miles west of Sevenoaks. The damage wreaked by the "hurricane" of October 16th 1987 was much in evidence, but miraculously the Giant Redwood, whose summit is actually the highest point in Kent, survived.

The gardens were not visited, although a public footpath bisects them and *Osmunda regalis* could be seen in flower beds. The purpose of the morning's visit was to explore Scords Wood below Emmett's garden (TQ 477 523). Most of the classic SE woodland species were seen along a woodland path, at what is arguably the finest time of the year, and further from the path, among fallen trees, some fine specimens of *Polystichum setiferum* were unrolling their fronds. *Athyrium filix-femina, Pteridium aquilinum* and *Dryopteris dilatata* were abundant, and the season provided an excellent opportunity to examine the differences in colour between *Dryopteris filix-mas* and *D. affinis* (subsp. *borreri*?). *Equisetum arvense* occurred in sparse numbers close to a pond.

After lunch, a Kentish ragstone wall at Combe Bank, Sundridge, was briefly visited (TQ 482 558). Within 25 yards, *Asplenium scolopendrium, A. adiantum-nigrum, A. ruta-muraria, A. trichomanes* and *Dryopteris filix-mas* could all be seen in abundance.

The party then moved to Great Comp garden, near Borough Green. This seven acre garden has a particularly fine collection of plants, again on the Greensand ridge, but in a more sheltered setting. A wide variety of trees and shrubs provided a perfect setting for an impressive collection of ferns scattered throughout the garden. Featured ferns included *Onoclea sensibilis, Polypodium* ? *interjectum* (on the walls of an artificial ruin!), *Osmunda regalis, Adiantum pedatum, Blechnum spicant, B. penna-marina, Athyrium filix-femina* (including 'Minutissima'), *Asplenium scolopendrium* 'Crispum', *Polystichum setiferum* 'Divisilobum' and 'Densum proliferum', and *P. aculeatum*. Again the season provided an excellent chance to see the difference between the many self-sown *Dryopteris filix-mas* and the almost bright yellow *D. affinis* (subsp. *affinis* ?).

The meeting ended with a fascinating visit to Clive Jermy's garden at Otford, and excellent refreshment kindly provided by Alma Jermy. As might be expected, the number and range of species was staggering, but what was particularly impressive was the variety of habitats created in what was originally a garden of perfectly ordinary dimensions. A satisfying and exhilarating conclusion to a varied day.

Gunnersbury Triangle - 24 September. Gunnersbury Triangle is an almost completely untouched wild area of a few acres set in the heart of urban and semi-industrial West London. At one time completely enclosed by railways, it has managed to avoid development and thus represents one of the last remnants of the natural condition of the London Thames basin. Saved (just) from the bulldozer by an extremely well-managed campaign, it is one of two nature reserves in Middlesex and assured of permanent preservation by outright purchase. It is a very important local amenity, used almost daily, for instance by schools in the area, and clearly serves a valuable function in the neighbourhood.

Seven members met at Chiswick Park station on a wet afternoon but were treated to a fascinating visit under the enthusiastic and knowledgeable leadership of Peter Edwards. With a few exceptions, such as the excavation of a small pond, the aim of the reserve's managers is to preserve as far as possible the natural condition of the terrain and thereby encourage the natural evolution of a habitat as typical as possible of that which once covered this area of London. Most of the area is wooded, mainly with birch of some 20 to 30 years of age, on essentially poor soil which in some areas is poorly drained and boggy. Evidence of active woodland development is provided by the extensive growth of hardwood saplings, notably sycamore and holm oak. There was an interesting variety of *Salix* spp. and most of the ground cover was provided by brambles.

Dryopteris dilatata was the commonest fern, abundant and luxuriant in places. A curious depauperate form was found on the edge of a boggy area; several plants were found together with flourishing nursery colonies. Opinions were divided as to whether the form was produced as a result of damage e.g. by pollution, or whether it was a genuine variety. The possible presence of normal fronds on a few plants tended to suggest the former. *Dryopteris carthusiana* was abundant in one very attractive area, together with *D. affinis (*subsp. *borreri* ?). It is possible that the hybrid *D.x deweveri* could be found here in the future. *D. filix-mas* was common, as was *Equisetum arvense,* while *Athyrium filix-femina* was also found.

Over mugs (Gunnersbury Triangle mugs of course) of tea kindly provided by the management, we were able to discuss with Peter Edwards some of the work of the reserve and began to appreciate the importance of the site, not just as a preserved habitat, but also as a unique example of ecological evolution and balance.

SOUTH-WEST

Mary Potts

Three meetings were held in the South-West during this year. The first, led by Dougal Swinscow in June was at Shangh Prior Bridge, a picturesque site where we found both species of *Hymenophyllum, H. tunbrigense* and *H. wilsonii,* as well as a small plant of *Osmunda regalis.* In the afternoon, we travelled to Cadover Bridge and searched fruitlessly for *Lycopodiella inundata.* We then visited Blackaton Cross and found huge stretches of *Isoetes* sp. in the ponds created by the china clay pits in a landscape almost devoid of other plants.

The second meeting was held at Newcastle House in Bridgend and hosted by Derek Fraser-Jenkins. Torrential rain soaked the large party who toured the garden looking at the many fine plants and trees and the *Dryopteris affinis* collection. Christopher Fraser-Jenkins gave us an excellent illustrated talk on his botanical trip to India. We also enjoyed a discourse on the minutiae of *Dryopteris affinis*, explained by Christopher with reference to many pressed specimens collected from around the world.

The last meeting was held on the Mendip Hills in Somerset. Christopher and Mary Potts led another damp expedition, discovering many species of ferns and allies, particularly *Botrychium lunaria* (which we found in abundance this year) and *Ophioglossum vulgatum*.

I should like to thank Dougal Swinscow, Derek and Christopher Fraser-Jenkins and John Boyd for their help in arranging these meetings and fortitude in the face of the British weather.

THE AMERICAN FERN SOCIETY INC

wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the "Fiddlehead Forum" six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to "Fiddlehead Forum", the scientific quarterly "American Fern Journal". Membership costs $10.00 and $19.00 per annum, respectively, including overseas postage. For particulars please write to Dr David S Barrington, Dept. of Botany, University of Vermont, Burlington VT 05405, USA. Prospective members residing in Great Britain should write to Dr B A Thomas, Dept. of Botany, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP.

SOUTHPORT FLOWER SHOW - 18-20 AUGUST

A R Busby

As if the weather was determined to have its effect on this year's show, the hot dry spell immediately prior to the show gave way to over two inches of rain in twenty-four hours on the Thursday, and as if to ensure a regular topping up of the two to four inches of water that was standing on the showground, we had regular doses of heavy showers throughout the three days.

Once again, in spite of the awful weather, exhibitors brought along their very best plants and flowers, and the gardening public, many lacking gumboots and waterproofs, waded around the showground to enjoy the efforts of the exhibitors.

Due to various personal reasons, one or two of the regular fern exhibitors were absent this year, and consequently the number of entries was down. Surprisingly, in spite of a relatively cool, wet spring and summer, some exhibits were suffering from sun-scorch and should not have been on the show bench.

This year's judges were A R Busby and R G Key. The prize winners are listed below.

Class 5 Six Hardy British Ferns (dissimilar):
1st B Russ (1 entry)

Class 6 Six Greenhouse Ferns (dissimilar):
2nd R J Smith, 3rd B Russ (2 entries)

Class 7 Three Hardy British Ferns:
1st R J Smith, 3rd B Russ (2 entries)

Class 8 Three Foreign Ferns hardy in Great Britain:
1st B Russ, 3rd R J Smith (2 entries)

Class 9 Three Asplenium scolopendrium (three varieties):
3rd B Russ (1 entry)

Class 10 Three Polypodium (three varieties):
2nd R J Smith (1 entry)

Class 11 Three Polystichum: (no entries)

Class 12 Three Athyrium (three varieties);
1st R J Smith (1 entry)

Class 13 Three Dryopteris (three varieties):
1st R J Smith (1 entry)

Class 14 Three Asplenium, excluding *(A. scolopendrium)*:
2nd B Russ (1 entry)

Class 15 One British Fern (any kind or variety):
1st R J Smith, 2nd W W Howarth (2 entries)

Class 16 One Greenhouse Fern:
1st Mrs B Shorrock, 2nd Mr & Mrs B Carberry,
3rd Mrs E A Gibbs (5 entries)

The 'Happiland Trophy' was won by R J Smith.

My thanks to Jack Bouckley and Ray Smith for helping with the staging and manning of the Society's Stand.

OBITUARIES

PROFESSOR IRENE MANTON, BA, ScD, PhD, FRS, FLS 1905-1988

It is with deep regret that we announce the death of Professor Manton. A full obituary appears in the Fern Gazette Vol. 13, part 4, 1988.

BARBARA TINGEY

I am very sad to record the untimely death at the age of 59, on 19th January 1988, of a friend of long standing and an active member of our Society. Barbara's chief interests were in the smaller ferns and it was as an enthusiastic member and Officer of the Essex Group of the Alpine Garden Society that she and her husband, Francis, gravitated to our Society, to become equally enthusiastic and active with us. Her great interest in life was plants.

In her professional life Barbara was a speech therapist, working from 1960 up to the time of her death with the Health Services in Ilford, Essex. Over the years she built up a Speech Therapy service covering the very young to the very old and the handicapped, and teaching, with infinite patience and skill, disabled children to communicate.

Barbara will be sadly missed in all her activities but most of all by Francis with whom she had a close rapport in their mutual plant interests. We extend our deepest sympathy to him in his tragic loss. They had no family.

Jimmy Dyce

MARJORIE CASTELLAN

It is with very real personal sorrow and a great sense of loss that I have to announce the sudden death of Marjorie. She was a stalwart in the life of our Society, in the field where she was a sound amateur all-round botanist, and in the hotel lounge in the evenings. She used to admit cheerfully that she talked too much but her conversation was always on a high level and held much of interest for our assembled company.

Marjorie was a member of the Society for 18 years from 1970 and only a matter of days ago, as I write, she was with us at our Annual General Meeting at the Chelsea Physic Garden on the 12th of March. Looking as spry as ever she was trying to claim precedence in age to me as an octogenarian but I was gleefully able to claim I was two years ahead of her. It was good to see her again looking so well, which has made the shock of her death so much greater.

Our deepest sympathy goes to her family and to her close friend, Margaret Kingston. They were always together at our meetings and it was inevitable from their surnames that they should be affectionately dubbed by us "The King and the Castle".

Jimmy Dyce

PAULINE TEMPLE-SIMMONDS

Our Member Peter Temple suffered a devastating loss in the death of his sister Pauline on February the 4th 1988 and we give him our deepest sympathies. They had lived together for a long time and during her last years with a lingering cancer Peter nursed her with loving devotion. Pauline, as we sometimes listened with delight, was a trained pianist (Royal Academy of Music), and was a frequent and most welcome companion with Peter at field and other meetings in the earlier post-war years.

J A Crabbe

WILLIAM STANLEY WEBSTER

A former Member and regular attender at field meetings during the Fifties, Bill died aged 67 of a coronary thrombosis on January the 5th 1988 and we give his wife Doreen our heartfelt condolences. A wonderful Yorkshireman, born in Saltaire, he served in the R.A.F., qualified and lectured in Textile Design, captained cricket, and was in all his life-style a perfectionist. I know one Member who has no television, and another who has no national daily newspaper; Bill, also on principle, had neither, relying on radio and The Yorkshire Post; how lovely! The search for Beauty entered also into his photography and horticulture. His garden and greenhouse contain magnificent displays of ferns, cactuses, auriculas, lilies, etc. He was a member of The Royal Horticultural, Alpine Garden, Auricula, and Scottish Rock Garden Societies, and The British Ornithological Union. At Bill's funeral the minister spoke an epitaph by Robert Burns: An honest man here lies at rest/As e'er God with his image blest./The friend of man, the friend of truth;/ The friend of Age, and guide of Youth;/ Few hearts like his with virtue warm'd,/Few heads with knowledge so inform'd:/If there's another world, he lives in bliss;/If there is none, he made the best of this.

J A Crabbe

NEW MEMBERS 1988

(A full list of members was published in the BPS Bulletin Vol. 3, part 2)

BAGIO, Mr P, K-9, Mary Morris Residence, 24 Shire Oak Road, Leeds LS6 2DE
BEESLEY, Mr D, Hagg Warren, Ravenshead, Nottingham NG15 9HE
BEESON, Mr R B C, Southover, Crouch Lane, Borough Green, Sevenoaks, Kent TN15 8LU
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BURMEISTER, Mr K, Hunsrückstr. 105, 4200 Oberhausen 1, West Germany
CHURCHILL, Mr H W, PO Box 628, North Adams, Massachusetts 01247, U.S.A.
CLUNIES-ROSS, Mr C, 73-A, King's Road, Singapore 1026
COCKBURN, Mrs B J, Burrow Heights, Scotforth, Lancaster LA2 0PG
DAY, Mr C, 2 Cedar Avenue, Whitefield, Manchester, M25 7FP
DOUGLAS, Miss G E, Dept. of Cell and Structural Biology, Williamson Building, Oxford Road, Manchester M13 9PL
DOWMAN, Mrs C M, The Finches, Orsett Road, Horndon-on-the-Hill, Stanford, Essex
DYKE, Mr T, 34 Lawrence Street, Glasgow G11 5HD
EDEN, Mr J J, 14 Lune Drive, off Lancaster Lane, Clayton Le-Woods, Leyland, Lancs PR5 2SX
FINNEY, Mrs S M, 29 Bateman Street, Basement Flat, Cambridge CB2 1NB
FISCHER, Dr U, Waterloostr 19, D 3300 Braunschweig, West Germany
GARCIA, Sr A, C/ Jacinto Verdaguer, 14-4 1, Cambrils, Tarragona 43850, Spain
GODARD-KEY, Mr & Mrs R L & M, The Old Bakery, East Side, North Littleton, Worcs WR11
GOODSHIP, Miss G, 33 Common Road, Langley, Slough, Berks. SL3 8JZ
GREWCOCK, Mr O, 10 West Street, Enderby, Leics LE9 5LS
GURUNG, Mrs V L, G P O Box 1370, Kathmandu, Nepal
HAMMERSLEY, Mr H W, 6 Cherry Walk, Monmouth, Gwent
HARRIS, Mr S W, 1805 Fernwood Way, Belmont, California 94002, U S.A
HART, Mr A A S, Lindfield, The Green, East Knoyle, Wilts SP3 6BN
HEWITT, Mrs J, Haygarth, Cleeton St Mary, Kidderminster, Worcs DY14 0QU
HODKINSON, Mr M, 5 Gleneagles Drive, Arnold, Nottingham
HOUITTE, Dr A, 9 Rue de Blainville, Agon 50230, France
HYMAN, Mr V L, 196 Oswald Road, Chorlton-cum-Hardy, Lancs. M21 1GW
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JUSTICE, Mrs A W, 1 High House Close, Morpeth, Northumberland, NE61 2BL
LAWRENCE, Dr W R & Mrs R STAMP, 163 Haxby Road, York, Yorks. YO3 7JL
LEE, Mrs C M, 51 Lawford Road, London N1 5BJ
LETT, Mr S, 155 Blackpool Old Road, Poulton-Le-Fylde, Lancs. FY6 7RS
LITTLEFIELD, Mr D B, 152 High Street, Sutton, Ely, Cambs. CB6 2NR
MATHIAS, Mr D H, Fairways, Chase Court, Dereham, Norfolk NR19 2DE
MATTHEWS, Mr H W, 39 Maple Avenue, South Harrow, Middx. HA2 8DG
MILLINGTON, Mrs I, 2 Rowley Park Farmhouse, Worfield, Bridgnorth, Shropshire WV15 5NT
OSTENRATH, Mr F, Zoo Duisburg AG, Muelheimer Strasse 273, 4100 Duisburg 1, West Germany
PARSONS, Mrs S J, Carinya, Goring Road, Woodcote, Reading, Berks. RG8 0QE
PONTING, Mr E, 4 The Brambles, Girton, Cambridge CB3 0NY
PREST, Mrs K E, 1 Arundel Court, Berkeley Road, Bishopston, Bristol BS7 8HE
REEVES, Mr R L, 43 Masshouse Lane, King's Norton, Birmingham B38 9AS
REYNOLDS, Miss M J, 2321 Alta Avenue, Louisville, Kentucky 40205, U.S.A.
ROBINSON, Mr B, 1 Uldale Close, Nelson, Lancs. BB9 0ST
SAUSMAREZ, Mr P de, Sausmarez Manor, St. Martin, Guernsey, Channel Is.
SCARISBRICK, Mr J P, 100 Green Lane, Great Sutton, South Wirral, L66 4LF
SCHRODER, Mr N R, 2 The Dell, Haywards Heath, West Sussex RH16 1JG
SCOBLE, Mrs P A B, 7 Friars Stile Road, Richmond, Surrey TW10 6NH
SIBBALD, Dr A, 18 Horseguards Drive, Maidenhead, Berks. SL6 1XL
SIMMONS, Mrs L M, 33 Rockliffe Road, Bathwick, Bath, Avon BA2 6QW
SINCLAIR, Mrs H M, Well End, Mere Road, Finmere, Buckingham MK18 4AR
TAYLOR, Mr W A, 261 Queensway, Scunthorpe, South Humberside DN16 2PJ
VILAR, Miss M, Dept. Botanico, Facultad de Farmacia, Universidad de Valencia, 46010 Valencia, Spain
WALSH, Mrs J E, Glas Fryn, Cwm Penmachno, Betwys-y-Coed, Gwynedd LL24 0RN
WOOD, Mr T J, Southcombe Gardens, Widecombe-in-the-Moor, Newton Abbot, Devon TQ13 7TU
ZYCH, Mrs C J, 18 Browmere Drive, Croft, Warrington, Cheshire WA3 7HT

MEETINGS 1989

Meetings Secretary: A C Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P J Acock, J M Ide, A C Pigott, P H Ripley

Saturday 4 March	**Annual General Meeting & Spring Indoor Meeting – Manchester Polytechnic, Loxford Tower, All Saints, Oxford Road, Manchester** Leader: Nigel Hall Time: 14.30-17.30
Saturday 20 May	**Day Meeting – Royal Botanic Gardens, Kew, Surrey** Location: Lower Nursery, which is adjacent to Kew Palace Leader: Peter Bradley Time: 14.30-17.30
Friday 2 June – Sunday 4 June	**Weekend Field Meeting – South Devon** Leader: Dougal Swinscow & Mary Potts Time: 19.30 on Friday 2 June; 09.30 on the other days Centre: Coombe Cross Hotel, Bovey Tracy, Devon TQ13 9EY
Thursday 30 June – Sunday 2 July	**Long Weekend Meeting – North West Shropshire** Leader: Anthony Pigott Time: 19.30 on Friday 2 June; 09.30 on the other days Centre: Lion Hotel, Llansantffraid, Powys (nr. Oswestry)
Sunday 16 July – Sunday 23 July	**Week Field Meeting – Perthshire** Location: Trossachs, south of Killin and east of Loch Lomond Leaders: Clive Jermy & Alison Paul Time: 19.30 on Sunday 16 July; 09.30 on all other days Centre: Rosebank House Hotel, Strathyre, Perthshire
Thursday 17 August – Saturday 19 August	**Southport Flower Show** The well-known premier North of England flower show with many classes for ferns. The B.P.S. has a stand in Tent No. 3 Further Info: A R Busby
Friday 25 August – Sunday 27 August	**Long Weekend Meeting – North Gwynedd** Leader: Nigel Brown Time: 19.30 on Friday 25 August; 09.30 on the other days Centre: Anglesea Arms Hotel, Menai Bridge, Gwynedd, LL59 5EA
Saturday 14 October	**Autumn Indoor Meeting – Roehampton Institute, Whitelands College, West Hill, Putney, London** Leader: Jennifer Ide Time: 13.00-17.00

For full details of all these meetings and available accommodation please consult your Meetings Programme sheet.

REGIONAL DAY MEETINGS

If you would like details of additional day meetings in the following areas, please contact the local organiser, enclosing a stamped, addressed envelope.

South-west England: Christopher and Mary Potts, 4 Kennel Lane, Webbington, nr Axbridge, Somerset. Tel: 093 472 545.
West Midlands: A R Busby, 16 Kirby Corner Road, Canley, Coventry, CV4 8GD. Tel: 715690.
North-east England: J H Bouckley, 209 Woodfield Road, Harrogate, N. Yorks., HG1 4JE.
South-east England: P H Ripley, 12 Farm Lane, Tonbridge, Kent, TN10 3DG.

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both amateur and professional.
For further information write to:
Dept. of Forest Botany,
Faculty of Agriculture, Tokyo University, Hongo,
Bunkyo-ku, Tokyo, Japan 113

1989 SOUTHPORT FLOWER SHOW

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17th, 18th, 19th AUGUST 1989

Schedules and further information from:
The Flower Show Secretary
Dept. 11, Town Hall, Lord Street, Southport, Merseyside, PR8 1DA

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The British Pteridological Society
BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 3 NUMBER 6

1989

Edited by A.R. Busby
and A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY
Officers and Committee for 1989

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President Emeritus: J.W. Dyce

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Trustees of Greenfield Fund: A.R. Busby, Dr N.J. Hards, Dr B.A. Thomas

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £10, Personal Members not receiving the *Fern Gazette* £7.50; Student Members £5; Subscribing Institutions £20. Family membership in any category is an additional £2. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £1.50 extra to cover bank conversion charges). Airmail postage for all journals – an extra £3.50, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: *Osmunda cinnamomea,* illustration taken from "Ferns and Fern Culture" by J. Birkenhead, circa 1900.)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 3 **1989** **No. 6**

SECRETARIAL NOTES

MEETINGS/MEMBERSHIP CARDS - Meetings/Membership cards for 1990 are enclosed with this Bulletin to all members.

COMMITTEE VACANCIES - In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1990. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 27 February 1990.

* *

SUBSCRIPTIONS 1990 - Members are reminded that subscriptions for 1990 are due on the 1st January 1990 and should be paid to the Assistant Secretary (Membership), British Pteridological Society, c/o Dept. of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL - Our journals can be sent by airmail to overseas members, provided they advise the Assistant Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

* *

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY - Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. Due to major changes concerning privileges for affiliated societies the free tickets for the Chelsea Show have been withdrawn. There are two transferable tickets available for all other RHS Shows. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE - The *American Fern Journal*, a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND - This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS - Now those long winter's evenings are upon us there is nothing quite like a little armchair ferning. Over the years I have found that there is nothing better to chase away winter blues than reading through past issues of the Society's journals. Here is a chance to escape to sunnier climes or come to a better understanding of details of the fern world. If you would like to buy back numbers, please write to Mr Acock for a price-list or send £5 for a bumper bundle of assorted issues!

WANTED - If you have finished with copies of the *Fern Gazette* Vol. 10, Pt. 3 or *BPS Bulletin* Vol. 1, No. 3, he is willing to buy these back as we have sold out of these parts and many members and subscribers are wanting to complete their collections.

Contact Patrick Acock, 13 Star Lane, St. Mary Cray, Kent, BR5 3LJ with your orders or offers of back numbers.

BINDERS for the BPS BULLETIN and PTERIDOLOGIST - Binders for volumes of the BPS *Bulletin* and *Pteridologist* are available from the General Secretary. The *Bulletin* binders are attractively produced with red hardboard covers and gold blocked lettering on the spine: only £3.50 each, postage and packing included. ONLY A FEW LEFT AT THIS PRICE.

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The video has been funded by Schering Agriculture and the National Museum of Wales.

It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

ANNUAL GENERAL MEETING 1989

MINUTES of the 86th ANNUAL GENERAL MEETING held at Manchester Polytechnic, Loxford Tower, All Saints, Oxford Road, Manchester on Saturday, 4 March 1989 at 2.15 p.m.

IN THE CHAIR: The President, Dr Barry Thomas.

PRESENT: J Acock, P J Acock, J H Bouckley, C S Brotherton, A R Busby, J A Collins, M W Collins, J A Crabbe, G E Douglas, L Dugdale, C R Fraser-Jenkins, N A Hall, E Hards, N J Hards, J M Ide, A Jermy, A C Jermy, R Kaye, M M Kingston, R P H Lamb, J W Merryweather, A H Ogden, A M Paul, M H Rickard, P H Ripley, Mr & Mrs R Smith, R N Timm, M J Tyson.

ITEM 1 - APOLOGIES FOR ABSENCE - J W Dyce, A C Pigott, G Tonge, A Willmot.

ITEM 2 - APPROVAL OF MINUTES - Minutes of the Annual General Meeting held on 12 March 1988 were read and approved.

ITEM 3 - MATTERS ARISING from those minutes - None.

ITEM 4 - HONORARY GENERAL SECRETARY'S REPORT - February 1989 marks the tenth year that you have kindly elected me General Secretary of our Society and I trust that at this 1989 Annual General Meeting I shall once again be allowed to continue to serve our Society. In my first Secretary's Report in February 1980, I commented on the approach of the Society's Centenary in 1991, warning that it was not too far away to begin considering how the Society should mark the event. Well, now it is almost upon us and your Committee is organising the framework for our Centenary celebrations. May I echo our President's plea last year: please let us have your ideas now!

MEMBERSHIP - Membership appears to have levelled out at about 650 as at 3 March 1989. We do have a shake-out of members that resign or just lapse and each year we try to find out the reasons for this. Obviously, fern growing is a minority interest and some people join the Society only to find that their interest is short-lived. Fortunately, new members tend to nullify the loss and in recent years I have been able to report a small gain, however, this seems to be no longer the case.

MEETINGS - 1988 proved to be another busy year for the Society with meetings well attended and local groups continuing to flourish. There are many areas that lack the activities of a local group and the Committee is keen to see the formation of local groups in such regions as Scotland, Ireland, Wales, the East Midlands and the North-West of England. Any members who are prepared to form such groups can look forward to every encouragement from the Society.

PUBLICATIONS - Editors' reports indicate that both the *Fern Gazette* and the *Pteridologist* have sufficient copy in hand for 1989, and casual conversations with members indicate that by and large they are well pleased with the contents of both each year. The *Bulletin* relies on meetings reports and Society business so copy is always assured. During 1988 the Committee has begun to re-assess the journals and to consider if changes are required. The Committee would be pleased to hear any members' comments.

Dr Barbara Parris, chief Editor of the *Fern Gazette* has retired from this post as she is returning to her native New Zealand. It is always a blow to the Society to lose such accomplished editors, however, we wish her every success in the future and trust that we shall not lose touch with her. Moves are afoot to find a successor.

CONSERVATION – Meetings between the Society's Fern Varieties Conservation Sub-committee and the National Council for the Conservation of Plants and Gardens continue annually and during 1988 general agreement was reached for arrangements for national collections of most of the British genera.

Our involvement with the Conservation Association of Botanical Societies continues and its business is reported in the publication *Plant Press,* sent to British members with our journals.

PLANT AND SPORE EXCHANGE SCHEMES – The Plant Exchange Scheme continues to flourish, however it can only be maintained if members are prepared to let Rosemary Hibbs, the organiser, know of your offers and requirements. Mrs Hibbs reports that during the last year, 50 different plants were offered including one from Denmark and over 40 lists were sent on request including four overseas. Mrs Hibbs ends her report by reminding us that its success depends on members sending in their lists of spare plants and using the service.

The Spore Exchange Scheme – The organiser, Mrs Margaret Nimmo-Smith is always anxious to receive spores of British species and varieties. Even the more common British species are in demand by our overseas members, so do please cultivate the habit of collecting spores to send to the scheme. In Mrs Nimmo-Smith's statement to the Committee she reports processing 116 separate requests for 2057 items from a list containing 541 items. I am pleased to pass on her thanks to all members who have taken the trouble to send in spores of their local and garden ferns.

Finally, once again I have to end on a sad note. During 1988, amongst others we have lost Prof. Irene Manton, Marjorie Castellan and Barbara Tingey. Many of our long-standing members will remember Prof. Manton's interest in our affairs and Marjorie and Barbara as regular attenders at our meetings. We shall miss them very much.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 – HONORARY TREASURER'S REPORT – Dr N Hards distributed copies of his balance sheet and after explaining the Society's income and expenditure for the past year, he was pleased to report that the Society's finances had once again kept pace with inflation. In reply to a question on bank charges, Dr Hards explained that these were incurred because the Society regularly received detailed listings on our various accounts. The report and balance sheet were approved and adopted by the meeting and the President thanked Dr Hards.

ITEM 6 – MEETINGS SECRETARY'S REPORT – In the absence of the Meetings Secretary, Miss Jennifer Ide gave a brief verbal report to the meeting. Meetings are well attended, especially the indoor ones. Kew Gardens remained the most popular outdoor gathering. The work done by regional groups was also commented on and Miss Ide urged members to support their efforts. Miss Ide thanked all regional organisers, leaders and hosts for providing such a varied meetings programme each year. The President thanked Miss Ide for the report.

ITEM 7 – REPORTS OF EDITORS – *'Bulletin'* – Mr Busby gave a brief report on the contents of the *Bulletin* expressing his desire for more photographs and appealed to members to submit photographs taken at meetings for possible inclusion in next year's *Bulletin*.

'Pteridologist' - Mr M Rickard reported that copy has again been a problem for the 1989 issue. Until mid-February he was still short of about ten pages worth of material, yet by the beginning of March, he was ten pages oversubscribed! How much easier the editor's job would be if the 31st December deadline could be met! As long as articles are suitable, it has to be a case of first come, first served. Mr Rickard went on to point out that with the 1989 issue, it brings his total of years as an editor of journals for the Society to 11 and he felt it was time for a change, change that will bring fresh life to the *Pteridologist* and enable him to pursue other 'ferny' interests. Mr Rickard said he will miss the very full correspondence he has enjoyed with members all around the world and the benefits that this brings but this is a perk that goes with the job and which the next editor can look forward to.

No candidate to replace Mr Rickard has been found yet, so suggestions are welcome; during the transitionary period he will, of course, be pleased to help in any way he can.

'Fern Gazette' - Mr James Crabbe was pleased to report that the 1989 *Fern Gazette* was well in hand due largely to the hard work of the retiring Editor, Dr Barbara Parris.

The President proposed that all the Editors' reports be approved and adopted and this was passed by the meeting.

ITEM 8 - ELECTION OF OFFICERS AND COMMITTEE - The President introduced this item by expressing his thanks to the Officers and Committee for all their hard work.

Election of Honorary Member - The President introduced this item and asked Mr Busby for his proposal; Mr Busby explained that it was traditional to elect as Honorary Members, members that have given extraordinary service to the Society.

Richard Cartwright first joined the Society in 1959 and took a keen interest in our affairs from the start. For several years he served on the Committee and played an important role on the Meetings Sub-committee during the 1960's. Most members will remember him for the 14 years he worked as organiser of the Spore Exchange Scheme. In that time, he built the exchange up from a small list of mainly British material to an enormous compilation of over 500 items of British and foreign species and varieties. During that time he has forged friendships with members and institutions world-wide. This Society has greatly benefited from having such a fine 'ambassador'.

The Secretary proposed that Richard Cartwright be given Honorary Membership. This was seconded by Martin Rickard and approved by the meeting with acclaim.

Election of Vice-President - The President asked Mr Busby to make the proposal on behalf of the Committee. James Crabbe has been a vital part of this Society since 1954. On the staff of the British Museum (Natural History), he helped guide and coax this Society through the complexities of Pteridophyte Botany. As Editor of the *Fern Gazette* he has and still does steer our premier journal through publication. This Society has greatly benefited from his professional skill and judgement and so it was the Secretary's supreme pleasure to propose him for election as Vice-President. The proposal was seconded by A M Paul and approved by the meeting.

Mr Crabbe replied that he was overwhelmed by the honour which he accepted with great pride.

Election of Honorary General Secretary - The President was pleased to note that A R Busby was willing to serve for another year.

Election of Honorary Treasurer - The President was also pleased to note that Dr N Hards was willing to serve for another year.

Election of Meetings Secretary - The Secretary reported that Mr Anthony Pigott was prepared to serve for another year.

All the Officers were elected unanimously.

Election of Committee - The Secretary reported that R P H Lamb and Dr A Willmot were due for retirement as the longest serving members of the Committee; there was also a vacancy carried over from last year, thus, there were three vacancies to be filled. Two nominations had been received; it was proposed by A M Paul, seconded by A R Busby, that Miss Josephine Camus be elected to the Committee and it was proposed by A C Jermy, seconded by A R Busby that Mr John Woodhams be elected to the Committee, both nominees having indicated their willingness to serve. Both candidates were elected unanimously.

As there were no further nominations from the floor, the third vacancy remained unfilled. The remaining seven members of the Committee were elected 'en bloc'.

ITEM 9 - ELECTION OF AUDITORS - Once again, Mr Jack Bouckley and Mr Richard Lamb had notified their willingness to serve for another year and were duly elected with the thanks of the President.

ITEM 10 - ANY OTHER BUSINESS -
a. Donation to the Conservation Association of Botanical Societies - Mr Christopher Fraser-Jenkins felt it important that members should be aware that at that morning's Committee meeting, the Committee had decided on behalf of the membership to make a donation to CABS and, at the request of the Association, had voted to give them £400. Dr Hards, the Honorary Treasurer, pointed out that this represented £1 per head for our United Kingdom members.

Mr Ray Smith asked what the money was to be used for. Miss Jennifer Ide, BPS representative on the Association Committee explained that CABS is run on a voluntary basis but that they hoped to raise sufficient funds to employ a full-time conservation officer for one year, based at the South London Botanical Institute. The donation was to be a once and for all payment and all other participating societies had been asked to make a similar contribution.

The President made it clear that the Officers of the BPS had voted against making a donation without consulting the membership, but the vote was carried in favour by the Committee.

The Meeting closed at 3.30 pm.

A R Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1988

ORDINARY ACCOUNT

(1987)	INCOME:	
£6569.38	SUBSCRIPTIONS	£5725.83
242.83	INTEREST	312.14
300.00	BOOKSALE PROFITS	200.00
19.86	DONATIONS	10.00
-	SPORE EXCHANGE	10.50
-	T SHIRT SALES	153.75
12.00	SUNDRIES	49.22
	TOTAL INCOME	£6461.44
	EXPENSES:	
1404.00	METLOC - PTERIDOLOGIST	1420.00
1867.00	METLOC - GAZETTE	2053.00
756.00	METLOC - BULLETIN	916.00
537.00	PRINTING AND STATIONERY	149.50
1279.25	ADMINISTRATION AND POSTAGE	1190.81
56.10	SUBSCRIPTIONS TO SOCIETIES	56.10
74.25	BANK CHARGES	80.11
-	SPORE EXCHANGE	37.75
170.20	MEETINGS	84.54
13.38	SUNDRIES	-
	TOTAL EXPENSES	£5987.81
	BALANCE FOR 1988	473.63
	BROUGHT FORWARD FROM 1987	3665.51
	PRIOR YEAR ADJUSTMENT	54.48
	CARRIED FORWARD AT 31.12.1988	£4197.62

PUBLICATIONS ACCOUNT

	BALANCE BROUGHT FORWARD		2338.22
149.52	SALES – Journals and Offprints	485.91	
	– Guide to Hardy Ferns	141.00	
	– Hardy Ferns	254.00	880.91
			3219.13
	COSTS - Fern Names	758.00	
	– Authors Prints	146.00	904.00
	CARRIED FORWARD AT 31.12.1988		£2315.13

GREENFIELD FUND

BALANCE BROUGHT FORWARD	1778.50
INTEREST RECEIVED	126.17
CARRIED FORWARD AT 31.12.1988	1904.67

CENTENARY FUND

DONATIONS RECEIVED	590.00
CARRIED FORWARD AT 31.12.1988	590.00

Notes to Accounts

1. The Society held the following stocks of books at 31st December 1988:-
   82 copies of *Hardy Ferns*
   170 copies of *Guide to Hardy Ferns*
   500 copies of *Fern Names and Their Meanings*
2. The prior year adjustment relates to an error in the balance on a Building Society Account.
3. Interest has accrued on the Centenary Fund and will be credited on 30.4.1989.

LECTURE MEETINGS AND DAY VISITS 1989

SPRING INDOOR MEETING - 4 March

My Ferns, an illustrated talk by Reg Kaye

As Martin Rickard put it, having been asked to introduce the speaker, "speakers are often introduced as being in no need of introduction, but today's speaker, Reginald Kaye, certainly needs no introduction to this Society. He is an eminent writer on ferns, one-time President and now a Vice-President, Honorary Member and currently our longest standing member, joining in 1929".

This was not to be a 'talk' on ferns or a 'lecture' on fern growing but in the bosom of a gathering of the faithful, it was, quite simply a discourse amongst friends. Provide Reg with a screen and projector for his slides and you are sure to be royally entertained.

His many slides included *Adiantum pedatum* 'Japonicum' "good for spring colour" and *A. pedatum* 'Miss Sharples'. The latter is a gold form named by Reg simply as a reference to an old friend at Grange-over-Sands but acquired by the Dutch and supplied by them as a named variety. For providing a little colour in the autumn Reg displayed *A. pedatum* and *A. venustum,* both deciduous. Now we saw slides of some very 'garden-worthy forms' of *Asplenium scolopendrium* in Judith Jones' garden in the United States, particularly *A. scolopendrium* 'Splendour', "a very noble form". Next came transparencies of lady fern, a huge clump of *Athyrium filix-femina* 'Clarissima', *A. filix-femina* 'Acrocladon', and a very good chance sporeling of lady fern "but what to call it?, perhaps after my dentist, it looks a bit dentate!". Also shown were *A. filix-femina* 'Capitatum' and 'Howardii'.

More hardy ferns from other countries came next: *Athyrium otophorum,* a crested form of *A. niponicum* 'Metalicum', *Botrychium virginianum, Blechnum alpina* "twice the size of *Blechnum penna-marina*" and *Cystopteris montana.* Among several varieties of British ferns we saw *Dryopteris dilatata* 'Stansfieldii' (sometimes grown as 'Hymenophylloides') *Dryopteris filix-mas* 'Martindale' and *Dryopteris oreades* "suitable for the rock garden". Others rarely seen in British collections included *Dryopteris arguta, Pellaea brachyptera* and *Matteuccia pennsylvanicum,* separated from the European *M. struthiopteris* by its glaucous frond bases.

Reg also showed slides of his recent tour of America, including a large nursery in Oregon with hundreds of ferns in pots and a huge area of pots containing prothalli.

All in all this was truly a fascinating talk, surely enough to tempt even non-fern growers to acquire at least some of these fern treasures. I for one hope it will not be too long before Reg next gives a talk at a Society meeting.

In addition to the main lecture, there were a few exhibits on display. Josephine Camus, Alison Paul and Clive Jermy showed beautifully illustrated posters of all *Asplenium* hybrids already known or which could occur in Britain (as displayed at the BSBI Exhibition meeting). Complementary to this was a range of herbarium specimens of the subspecies and hybrids within the *Asplenium trichomanes* complex, shown by Martin Rickard. Two taxa new to Britain were on display - *Asplenium trichomanes* subsp. *pachyrachis* and *A. trichomanes* nothosubsp. *staufferi* (the hybrid between susbp. *pachyrachis* and subsp. *quadrivalens).*

Some surplus plants were generously given away at the meeting, presumbly by Clive Brotherton. They included fine young plants of *Platycerium* and some of Clive's specialities

- *Cheilanthes* and *Pellaea* etc. Such generosity helps to make meetings 'something special'.

All that remained was for the President to give a vote of thanks to Reg on behalf of the members for an afternoon of superb slides and witty comment. Sincere thanks also to Nigel Hall for arranging the venue and for kindly inviting members to visit his home and garden after the meeting.

A R Busby

KEW GARDENS - 20 May. On Saturday 20 May, on what appeared to be one of the warmest May days on record, 38 members assembled in the Lower Nursery at the Royal Botanic Gardens, Kew, for what has come to be the most popular meeting of the Society's calendar.

The party was welcomed by our President, Dr Barry Thomas, who introduced Mr Peter Bradley and Mr Simon Hickmot, our hosts and guides for the afternoon. We began with a look at the 'back-up' collection of tropical ferns that are housed in the nursery greenhouses. Mr Bradley pointed out many rarely seen species amongst the representatives of *Polypodium, Marattia, Angiopteris* and numerous young tree-ferns. It appeared that virtually every family of the Filices were represented.

Further on in another part of the glasshouse range are various ferns that have been raised from spores. Amongst these were several species of *Cheilanthes, Pteris, Polypodium, Nephrolepis* and *Doodia*. In a greenhouse at the end of the range used exclusively for spore sowings, there were several hundred ferns at various stages of development.

It was interesting to see how Kew carry out their spore sowings. I failed to enquire about the details of the compost used, but three-inch crock pots are filled to the rim with a fine compost, covered with a petri dish lid, and then steam sterilised in an autoclave in the laboratory. After the pots have cooled, the spores are sown on the surface and the plastic lid quickly replaced. The pots are then stood in a large plastic tray which contains about 1-2cm (½ inch) of water to which is added a little potassium permanganate to discourage the development of algae. The result is very clean healthy pots of prothalli. I could not help but notice that in many of the pots, the spores that germinated most prolifically were those that found themselves closest to the rim of the pot. It is interesting to speculate on the significance of this.

After expressing our thanks to Mr Bradley and Mr Hickmot for providing us with such an interesting afternoon, the party made its way to the filmy-fern house which proved a cool, shady refuge from the heat outside.

Not all the ferns in the filmy-fern house are 'filmy' and Martin Rickard led the party through the house pointing out the various species of particular interest including several which are hardy, such as some *Osmunda* and *Polystichum* that stand in pots along the corridor, and a very attractive fern called *Arachniodes standishii* (syn. *Polystichopsis standishii),* which Martin assured us is perfectly hardy.

Shortly afterwards the party said their goodbyes and dispersed.

A R Busby

HERTFORDSHIRE - 5 August. Hertfordshire is not the most obvious place to go looking for ferns, but it has most of the species of south-east England within its borders. It was time that the BPS went to look at what was on offer. We were fortunate to have with us Trevor James who, amongst other things, is the county recorder. Newgate Street, a village south of Hertford, was our meeting point and target for lunch.

First stop for our party of ten was Wormley Wood, an SSSI owned by the Woodland Trust (52/3105-3106). We saw *Dryopteris filix-mas* and *D. dilatata* scattered throughout the wood along with a few plants of *D. affinis* subsp. *borreri*. There is a twenty year old record of *Oreopteris limbosperma* in the wood, but despite a careful search of likely spots, none was found. An interesting find was a small group of *Polystichum setiferum* on the banks of a stream, a new record for Wormley Wood. Perhaps the most interesting sight was a very large area of *D. carthusiana*, as dense as one could see anywhere in Britain. Horsetail enthusiasts were kept happy by a large stand of *Equisetum telmateia* in a wet patch on the north side of the wood.

After lunch we walked along the edge of Bell's Wood (52/3007) where there was an old record of *E. sylvaticum*. Although this was apparently plentiful in the last century, it has rarely been seen since. We did not hold out much hope but were pleasantly surprised when we almost trod on two shoots of it. Hopefully there is more of it further into the wood.

Next we visited a steep ravine to the north of Bayford Wood (52/3009), walking up the stream bed which was completely dry as a result of the very dry summer. Here we found, apart from the ubiquitous *D. filix-mas* and *D. dilatata,* a large group of *Polystichum setiferum,* some of them very large plants.

The day ended with tea at the leader's house in Hertford, where a few plants of *Dryopteris* and *Equisetum* could be inspected.

A C Pigott

AUTUMN INDOOR MEETING - 14 October. Chat show? Talk show? Not quite, but for want of a better name, this meeting was given the grand title of 'Paper-reading Meeting'. Thirty members, representing a cross-section of interests of the membership, gathered at Whitelands College of the Roehampton Institute, Putney, London, to hear four diverse and fascinating talks and to see a short film. A pleasing number of folk had travelled some distance to attend and most regions of Britain were represented.

Dr Trevor Piearce from Lancaster opened the afternoon with a talk on 'Soil animals in the Age of Ferns'. He described experiments which have shown that a variety of modern ferns and horsetails were acceptable food for both earthworms and woodlice. Although scarce in the fossil record, large decomposer animals were present at the time when pteridophytes dominated the earth's vegetation. They included a two to three foot long woodlouse-like creature which no doubt 'chomped' its way through horsetails and lycopods as its contribution to soil formation! One wonders if they each had distinct personalities as we learnt that modern woodlice do! It seems reasonable to suggest from the evidence, that well-humidified soils may well have been common when ferns were abundant and that they were important contributors to them. Such soils have not survived because they were not suitable for fossilisation.

A projected 'Red Data Book for European Pteridophytes' was the subject of Clive Jermy's talk, which he illustrated with slides of the more rare and vulnerable pteridophytes of

Portugal. He spoke of local industries using the tree-fern *Culcita macrocarpa* and stressed the threat to aquatic ferns such as *Marsilea quadrifolia, M. batardae* and *Pilularia minuta*.

Margaret Nimmo-Smith took us up to tea-time with a revealing talk about the 'Spore Exchange Scheme' which she now organises. Margaret explained that it is not so much an exchange as a spore bank. She went on to describe the sources of the spores which the exchange receives, some of the problems associated with nomenclature, and that, unfortunately spores do occasionally turn out not to be what they purport to be. Some of the donors and recipients enter into correspondence with Margaret and from these she learns of new developments in other Societies and of personal trials and tribulations, though not always with pteridophytes!

After tea, Margaret Tyson, in the second year of her PhD studies at Manchester University, gave us an insight into her work on the uptake and transport of the radioisotopes of strontium and caesium in bracken, and of her disturbing results. The work has shown, for example, that caesium deposited in the typical mineral soils of lowland agricultural systems rapidly becomes unavailable to plants, and therefore to the rest of the food chain, because it becomes bound to the clay particles in the soil. However, when it is deposited on organic soils such as the peat soils of north-west Britain, as happened after the Chernobyl diasaster, it remains mobile and available to plants and the rest of the food chain.

'The life cycle of *Equisetum*' was the subject of the short film which ended the afternoon. Made in Germany, but with an English commentary, the film showed, amongst other things, the amazing telescopic growth of the shoots of *Equisetum* and the spectacular cascade of green spores as the cones ripened, made all the more memorable through the agency of time-lapse photography.

This first paper-reading meeting was declared a success by all present and our thanks go to the speakers, who so kindly volunteered their contributions and were prepared to travel so far to give them. (More detailed accounts of three of the talks will appear in the Pteridologist.) Similar meetings are planned and it is hoped that they will become a regular event. The aim is to cater for all shades of interest in the Society and for them to be a means by which we can learn about the diverse activities of members (and non-members) concerning pteridophytes. Plans for next year's meeting are well advanced and will have the theme of 'Fossil Pteridophytes'. Ideas for future meetings would be welcomed by the Meetings Secretary.

J M Ide

THE AMERICAN FERN SOCIETY INC

wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum*, the scientific quarterly *American Fern Journal*. Membership costs $10.00 and $19.00 per annum, respectively, including overseas postage. For particulars please write to Dr David S Barrington, Dept. of Botany, University of Vermont, Burlington VT 05405, USA. Prospective members residing in Great Britain should write to Miss A M Paul, Dept. of Botany, Natural History Museum, Cromwell Road, London SW7 5BD.

NATIONAL FIELD MEETINGS 1989

SOUTH DEVON - 3-4 June

T D V Swinscow

This weekend field meeting was based at Bovey Tracey, Devon. Mary Potts was the leader on the first day and Dougal Swinscow on the second.

We spent Saturday morning near the junction of the Rivers Dart and Webburn (20/716725). These sheltered valleys are filled with deciduous woodland of (mainly) oak together with birch, alder, beech, sycamore, and the occasional small-leaved lime and hornbeam, the last presumably planted. Here *Osmunda regalis* is probably at its finest in Devon. Hundreds of large plants were growing along the margins of the Dart both in woodland and in the open. Many very young plants were also seen, one of them growing precariously on a stone in a boggy flush. Apart from that species and bracken, the main ferns of this area were *Dryopteris filix-mas, D. affinis* subsp. *affinis* (probably), and *D. dilatata. Athyrium filix-femina* was abundant, the forms with pale and dark rachis being equally common. *Blechnum spicant* grew to a large size in the many boggy areas there. *Oreopteris limbosperma* was well represented, and *Asplenium scolopendrium* flourished on banks in the woodland. *A. adiantum-nigrum* grew along a hedgerow and *A. trichomanes* subsp. *quadrivalens* in the mortar of a bridge. *Polypodium interjectum* was common on the mossy branches of trees.

A trek northwards up the River Webburn brought us to a rock at the riverside on which *Hymenophyllum tunbrigense* grew. I first examined this site in 1953, when I was directed to it by the Revd E A Elliott, the Society's honorary secretary and editor. He had known of it for some years. The fern is thus probably known to have been growing there for over 40 years. Although still abundantly present, it covers a much smaller area than when I first saw it 36 years ago. A part of it was illustrated in a plate at the beginning of the *British Fern Gazette* 1954, vol. 8, no. 4. Sadly I have no doubt that both *Hymenophyllum* species have become much sparser in Devon over the intervening years.

In the afternoon we visited Yarner Wood (20/7878). Here the same species were seen with the addition of *Dryopteris aemula,* which is well represented there on rather dry banks away from the main stream. In a valley bog through which the stream runs we admired a wonderful stand of *Osmunda,* great thickets of the fern growing in the valley floor of sphagnum moss.

On the Sunday morning we visited Netton Cleave (20/8282) in the hope of seeing *Asplenium septentrionale,* but the vegetation in its summer foliage provided too dense a cover for the right rock to be identified. This beautiful valley had similar species to those in the Dart valley except that we did not see *Oreopteris limbosperma.* A small growth of *Hymenophyllum tunbrigense* was on one of the boulders. In the afternoon we scoured lanes near Bickington, a few miles south of Bovey Tracey, for varieties of *Polystichum setiferum* and *Asplenium scolopendrium,* but without finding anything unusual.

Rain was badly needed in Devon, but unfortunately it picked our Saturday to fall ever more penetratingly as the day wore on. Needless to say, fern hunting was not disrupted. On the Sunday we had a fine day with only a shower in the afternoon. The nine members who attended the first day and the seven who remained for the second day enjoyed, if not any novelties, at least a wealth of luxuriantly grown ferns.

NORTH-WEST SHROPSHIRE - 30 June-2 July

A C Pigott

Although described as 'North-West Shropshire', this meeting was held on the Welsh borders, with some of the sites actually straddling the two countries. The area covered was approximately within the triangle formed by Oswestry, Shrewsbury and Welshpool, most of which is often described as the Oswestry Uplands. We were based at the Lion Hotel in Llansantffraid-ym-Mechain.

We began on the Friday morning at Gaer Fawr Wood, which is owned by the Woodland Trust and has an ancient hill-fort. Leaving the small car park at 33/219126 we walked up into the wood. Ferns were not as much in evidence as we had expected, with only *Pteridium aquilinum, Dryopteris filix-mas* and *D. dilatata* being widespread. There was a little *Polypodium vulgare* and *P. interjectum,* a few isolated plants of *D. affinis* subsp. *borreri* and just one specimen of *Polystichum aculeatum.*

Our next stop was a conifer plantation on Long Mountain. We stopped in a parking place at 33/275077, from where we followed a forestry track to the north-west, leaving it to go down a steep slope to a stream. Here we found *Athyrium filix-femina,* including the red-stemmed form, *Dryopteris filix-mas, D. dilatata, D. affinis* subsp. *affinis* and subsp. *borreri.* Amongst the *D. affinis* were several foliose examples of the *'robusta'* form, which may be a variety of *D. a.* subsp. *borreri,* but seems quite distinct. Increasing rain encouraged us to make our way to Welshpool and lunch.

The afternoon was spent on Breidden Hill. Starting from the Forestry Commission car park, south of Criggion, at 33/295149, we walked up the track towards Brimford Wood. On the screes we saw *Gymnocarpium dryopteris* and *Polypodium vulgare* along with a little *Dryopteris filix-mas* and *D. dilatata* in the ditch. On the other side, above the wooded slopes were additionally *Pteridium aquilinum* and *Equisetum arvense.* Further up we found some *D. affinis* subsp. *affinis* and subsp. *borreri,* with one large and distinct-looking plant which may have been a hybrid. We continued around to the south-east of Breidden Hill proper and across the saddle past Rodney's Pillar. Just before the track started to drop steeply through Bytherig, we saw a patch of *D. affinis* subsp. *cambrensis.* The path continued through dank old woodland, boulder scree above with a steep slope down to the stream below. Here we found most of the woodland ferns seen earlier and added *Polystichum setiferum* and *Athyrium filix-femina.* After leaving the wood, we continued along the road which took us through the quarry and on a wall found *Asplenium adiantum-nigrum* and *A. trichomanes.*

We began Saturday with a trip further into Wales to visit Coed Pendugwm, a wood owned by the Montgomery Wildlife Trust. We parked in the nearby farmyard at 33/102142, braved the tyre-biting sheepdog and walked north-eastwards into the wood. We explored the wood for some time, finding *Dryopteris filix-mas, D. dilatata, D. affinis* subsp. *borreri, Athyrium filix-femina, Blechnum spicant, Oreopteris limbosperma* and *Polypodium vulgare,* of which we found a very impressive patch growing on a log in a stream. We also found a few plants of *D. affinis* var. *paleaceo-lobata,* which may be a variety of subsp. *affinis,* but is very distinct, having lobed and crisped pinnules, and its fronds develop noticeably later than the other common forms. It appears to be fairly common from the West Country up at least as far as the Lake District in the west of Britain. It is superficially similar to and has often been confused with subsp. *cambrensis* in the past. Leaving the reserve, we walked through some private forestry to the south where we added *Equisetum arvense,* a large and impressive stand of *E. sylvaticum* and one plant of *D. carthusiana.* We left the plantation on the north side and re-entered the old woodland at Ty-coch (struggling through a barbed-wire fence across the footpath). The path then dropped steeply down to the stream which we followed back to our starting point in the wood. On crossing the stream we saw a plant of *Asplenium scolopendrium,* which we had not seen earlier. One of the party returned via a slightly different route on which he saw a large stand of *Polystichum setiferum.*

After lunch in Pontrobert, we drove to Llanymynech Hill, parking along the road at 33/263231. We followed the path which took us up a very steep slope to the top of Blodwel Rock from where it continued to the north-east along the edge of the limestone scarp. Along the way we saw *Polystichum setiferum, Asplenium scolopendrium, A. trichomanes* and some particularly large *A. adiantum-nigrum.* We knew of an old record for *Polypodium cambricum* on Blodwel Rock, which we presumed was on the inaccessible cliff-face. At one point, two of the group found a way down from the top and were rewarded by discovering it growing just beside an entrance to a small cave some 20 feet down the rock face. On the open meadow of the plateau on the top of the rock, we were shown a location of *Ophioglossum vulgatum* where some 20 or so plants were growing very close to the footpath. These meadows were also rich in other wildlife, including impressive numbers of orchids and butterflies.

Our next stop was a brief visit to the disused quarries of the Llanymynech Rocks on the opposite (south-east) side of Llanymynech Hill. Whilst the rocks themselves were almost completely barren, on the nearby wooded slopes below were found large numbers of *Polystichum setiferum* and *Asplenium scolopendrium,* and some *A. adiantum-nigrum, Dryopteris filix-mas* and *D. affinis* subsp. *borreri.*

Sunday began with a visit to Aston Locks. After leaving the cars near Queen's Head at 33/340268, we walked south-westwards along the disused canal. On the canalside and in the ditch by the track, we found first *Equisetum arvense,* then *E. palustre,* and finally *E. telmateia* in an unbroken and overlapping series of stands stretching down to the first lock. We were also shown some *Equisetum* shoots similar to those which had been identified as *E.* x *font-queri.* On the walls of the lock itself we found *Asplenium adiantum-nigrum, A. trichomanes* and *A. scolopendrium.* Walking further along the canal, we saw *E. fluviatile,* making four *Equisetum* species within a short distance.

After taking an early lunch at Tyn-y-Coed, our next stop was a wood on the Morda Valley which we entered on the south side from the pub car park at 33/256282. We walked northwards along a relatively low level path, returning south on the higher level. The woods contained a large number of ferns, mainly *Dryopteris,* of which we saw *D. filix-mas, D. dilatata, D. affinis* subsp. *borreri,* subsp. *affinis* and var. *paleaceo-lobata.* Also seen were *Asplenium adiantum-nigrum, Pteridium aquilinum, Blechnum spicant, Athyrium filix-femina* and *Polypodium vulgare.*

Our final visit was to the woods on the Cynllaith Valley which we approached from the hotel car park at 33/242350. After walking down the track through this mainly conifer plantation, we cut through to a field and across down to the stream through Bryn-coch Dingle which we fought our way along, eventually coming back to the track up an almost vertical muddy slope through the wood. The ferns were much thinner on the ground here, the only ones seen being *Pteridium aquilinum, Athyrium filix-femina, Dryopteris filix-mas, Polystichum setiferum* and *Equisetum arvense.*

We had a very full three days and had seen a good selection of different habitats and soil/rock types in the area, along with their fern flora.

STRATHYRE, PERTHSHIRE - 16-23 July

Alison Paul

The main purpose of this meeting, set amid the beautiful mountains of south-west Perthshire, was to assist Nick Stewart, BSBI recorder for West Perthshire (v.-c. 87) in his compilation of records for a checklist of vascular plants of the vice-county. We hoped to confirm some older records as well as add new records.

Eight members and friends assembled on Sunday evening at Rosebank Guest-house, Strathyre, our centre for the week, to discuss the programme. The next day began at a gentle pace, exploring the woods north of Strathyre on the lower slopes west of the River Balvag. Our first stop (27/557184) was an area of wet alder woodland supporting *Blechnum spicant, Oreopteris limbosperma,* all three subspecies of *Dryopteris affinis, Athyrium filix-femina* and *Pteridium aquilinum. Dryopteris dilatata, D. carthusiana* and their hybrid *D.* x *deweveri* were also recorded. *Phegopteris connectilis* was abundant, and fern allies were attractively represented by *Equisetum sylvaticum.* A little further north *Gymnocarpium dryopteris* was plentiful on a roadside bank and *Polypodium vulgare* was also recorded. Stronvar Bridge (27/535205) near Balquhidder was our first of many *Isoetes* hunting grounds. *I. echinospora* and *I. lacustris* were both found in the slow-flowing river. *Equisetum fluviatile* was present, the very branched form on the shady bank and a stand of the unbranched form in the river. *E. arvense* and *Dryopteris filix-mas* were also seen, and on the bridge itself were tiny plants of *Asplenium ruta-muraria* and *A. trichomanes* subsp. *quadrivalens.* Non-pteridological interest was provided by the uncommon least yellow water-lilly, *Nuphar pumila,* and tufted loosestrife, *Naumbergia thyrsiflora,* though the latter was not in flower.

Our lunch stop beside Loch Voil (27/508203) led to the discovery of more *Isoetes lacustris.* Chris Page showed us that the predominant form of bracken in the area was intermediate between *Pteridium aquilinum* subsp. *aquilinum* and subsp. *latiusculum,* the pure form of the latter being restricted to old pine woods in N. Central Scotland.

The rest of the day was spent further west, following the Invernenty Burn (27/4517) up from the River Larig. The meadows and woodland beside the river contained *Equisetum arvense* and *E. sylvaticum, Dryopteris affinis* subsp. *affinis, Oreopteris limbosperma, Athyrium filix-femina* and *Phegopteris connectilis.* Our route up the Burn was hazardous, with damp, slippery boulders to negotiate. *Hymenophyllum wilsonii* adorned some mossy rocks, and *Asplenium trichomanes* subsp. *quadrivalens* sprouted from the rock-face at the side of the deep gully. Both oak and beech ferns were present and *Polypodium vulgare* was epiphytic on a rowan tree. Further up *Asplenium viride* was found, along with *Cystopteris fragilis* and *Polystichum aculeatum.* Turning up Allt a' Choire Bhain to the right, *Selaginella selaginoides* and *Huperzia selago* were common and *Asplenium viride* grew in profusion under the rocky overhangs. At a higher altitude on Stob Breac Nick Stewart added *Lycopodium clavatum. Diphasiastrum alpinum, Dryopteris oreades* and *D. expansa* to the list of species seen on our first day.

On Tuesday we were joined by another member for a very hot day in Glen Falloch, south of Crianlarich. Our mission here was to search rocky ledges of the crags on Beinn a' Chroin and An Caisteal for *Woodsia alpina,* Nick believing this to be the most likely site for E S Marshall's record of 1890. In this respect the day was unsuccessful, but we did see a good range of pteridophytes. From the A82 (27/370238) we walked south-east beside the River Falloch. On the lower slopes of Sron Gharbh *Huperzia selago* was found in the turf, while nestling under boulders were *Dryopteris dilatata, D. expansa, Phegopteris connectilis, Gymnocarpium dryopteris* and *Oreopteris limbosperma.*

Equisetum sylvaticum, Athyrium filix-femina and *Dryopteris affinis* subsp. *borreri* were also added to the list before pausing for lunch below Beinn a' Chroin. *Diphasiastrum alpinum* was observed here creeping over the rocks. At the base of rocky cliffs *Cystopteris fragilis* and *Asplenium viride* were espied, with two mountain ferns nearby - *Dryopteris oreades* and *Polystichum lonchitis*. The latter was growing between boulders, but was not common.

Having reached c. 710m, the level above which we hoped to find *Woodsia alpina, Athyrium distentifolium,* with its characteristic spreading, yellow-green fronds, was discovered in the shelter of a boulder, a species not previously recorded with certainty from v.-c. 87. *Diphasiastrum alpinum* was more abundant at this altitude. One of the most interesting finds was a tiny plant of *Cryptogramma crispa* spotted under a boulder; a new record for the area. Returning from Beinn a' Chroin via the lower slopes of An Caisteal *Blechnum spicant* was seen; *Polypodium vulgare* and *Asplenium trichomanes* were found on rocks. Clive Jermy was pleased to find a population of the uncommon *Carex magellanica*.

The next day we ventured further north, into vice-county 88, Mid Perthshire. From the River Lochay at 27/500369 we embarked on the long, hot climb up Allt Dubhchlair towards Meall na Samhna, five miles west of Killin. The species list was similar to the previous day, but we did not see *Dryopteris oreades, Cryptogramma crispa* or *Polypodium vulgare*. *Polystichum aculeatum* was recorded early in the day, but higher up *P. lonchitis* was more common than on Beinn a' Chroin, growing under boulders and on cliff ledges in Coire Dubhchlair. The main object of our search was *Cystopteris montana,* known from this site, but though we scrutinised every wet ledge we could find in a number of rocky gullies, there was no sign of it. Had it succumbed to the very dry season? Scrambling up one gully a few tiny plants of *Botrychium lunaria* were spotted in the turf, and *Selaginella selaginoides* was quite common in damp flushes. It was a good day for horsetails. In addition to *Equisetum sylvaticum, E. arvense* was recorded, and *E. palustre, E. pratense* and *E. variegatum* were also seen. The first members of the party to reach the summit surprised a group of Ptarmigan, but sadly they had gone by the time the rest of us arrived. On our way back to join those who had spent the day at lower levels, we were glad to find Chris Page coming to meet us in the landrover, saving us the last half mile of track. We took a detour to Killin via beautiful Glen Lyon, stopping to have other sites of *Woodsia alpina* and *Cystopteris montana* pointed out to us from a distance. (Later in the week some members successfully found the *Cystopteris* here, but *Woodsia* still eluded us).

After supper in Killin we in turn fed the midges during an unsuccessful hunt for *Pilularia globulifera* beside Loch Tay (27/584344), last seen here in 1986. *Equisetum palustre* was common on the shore and there was a very attractive population of lesser water-plantain, *Baldellia ranunculoides*.

On Thursday we were joined by two more members for a slightly cooler and less energetic day focussed around Loch Lubnaig. We commenced with the eastern shore at the northern end of the loch (27/563152). *Equisetum fluviatile* was plentiful, and the water-lilies, including *Nuphar pumila,* and *Lobelia dortmanna* were flowering profusely. After such a long dry season the water level was very low, enabling us to easily see the *Isoetes echinospora* at the lake edge. Several small distinctively yellow-green patches of *Pilularia globulifera* were found in the exposed mud, bearing an abundance of sporocarps. On the west margin of the loch (27/565146) *Isoetes lacustris* was collected, and more *P. globulifera* was seen further north. To the south *Isoetes* was still common, but no pillwort was found.

After lunch we drove up a Forestry Commission track and stopped to explore an interesting-looking gully (27/552149) where there were large graceful stands of *Equisetum sylvaticum. Oreopteris limbosperma, Athyrium filix-femina, Dryopteris dilatata* and *Blechnum spicant* were all noted, with *Phegopteris connectilis* on the shadier banks. There was much discussion on the subspecies of *Dryopteris affinis;* Clive Jermy, Chris Page and Anthony Pigott agreed those represented here were subsp. *borreri* and subsp. *cambrensis.* At one point we watched in awe the amazing manoeuvres of a huge logging truck which decided to turn round where our cars were parked! Further south along the track *Equisetum arvense, Cystopteris fragilis* and *Gymnocarpium dryopteris* were present, with *Polypodium vulgare* on mossy rocks beside a waterfall. *Asplenium viride* was seen, and enormous plants of *A. trichomanes* subsp. *quadrivalens.*

The track zig-zagged back down to Loch Lubnaig, where we stopped to explore a promontory (27/580134). It was too stoney for *Pilularia,* but we did find *Equisetum* x *dycei* on the shore (a new vice-county record), with both parents, *E. fluviatile* and *E. palustre,* nearby. Investigations further down the loch revealed no new pteridophytes, but plenty more *Isoetes* at 27/583110 which Clive, by now a familiar sight clad in waders and deerstalker with *Isoëtes* spear in hand, collected for electrophoretic studies. Our final search for *Pilularia globulifera* was at the north-western end of Loch Lubnaig. Just as we had given up in favour of reaching Strathyre while food was still being served, we came across a fairly extensive colony (27/560152). Both species of *Isoetes* were again seen, but no positive signs of hybrids.

By Friday morning the weather had deteriorated. Having assembled near Brig O' Turk (27/530066) we donned our cagoules and botanised in the woods beside the river east of Loch Achray. The *Dryopteris affinis* here was mainly subsp. *borreri,* with a little subsp. *cambrensis. Equisetum fluviatile* was the only fern ally seen. *Oreopteris limbosperma* was common beside the river, and *Polypodium vulgare* was growing on tree branches overhanging the river. Other ferns recorded were *Athyrium filix-femina, Dryopteris dilatata, D. carthusiana, D. filix-mas, Blechnum spicant, Phegopteris connectilis* and *Pteridium aquilinum.* On the other side of the road in drier conditions *Asplenium adiantum-nigrum, A. trichomanes* subsp. *quadrivalens* and *Polystichum aculeatum* were seen, and *Isoetes echinospora* was found in the edge of Loch Achray. From here we moved on to the south-eastern end of Loch Katrine (27/495073). The most exciting discovery here was a single plant of *Dryopteris aemula* on the steep oak and birch wooded slopes beside the car park, a new vice-county record. *Gymnocarpium dryopteris* and *Hymenophyllum wilsonii* were the only other species seen here that were new for the day.

Following lunch in the cafe or cars, we moved on to Aberfoyle slate quarries (27/507031). The extensive heaps of slate scree provided an ideal habitat for *Cryptogramma crispa* which grew abundantly. *Gymnocarpium dryopteris* was also very common, but was obviously suffering from the weeks of drought. The slate showed off to advantage the numerous light-green shuttlecocks of *Dryopteris affinis* subsp. *cambrensis.* Here we also saw *Huperzia selago, Diphasiastrum alpinum, Dryopteris dilatata, Polypodium vulgare,* and a little *Athyrium filix-femina, Dryopteris filix-mas* and *D. affinis* subsp. *borreri.*

After obtaining permission from the Forestry Commission, we drove through Achray Forest to Lime Craigs Quarry at Bealach an t'-Suidhe. This is a very interesting area geologically. It is on the Highland Boundary Fault, with cliffs of conglomerate, and also Dounans Limestone and Dolerite. The cliffs themselves were colonised by *Polypodium vulgare* and *Asplenium trichomanes* subsp. *quadrivalens,* while sheltered at the base grew lush plants of *Cystopteris fragilis, Athyrium filix-femina* and *Dryopteris affinis* subsp. *affinis. D. affinis* subsp. *cambrensis* was also recorded, as were *D. filix-mas, Asplenium adiantum-nigrum, Gymnocarpium dryopteris* and *Blechnum spicant,* with *Equisetum fluviatile* in a wet flush and *E. sylvaticum* and *Lycopodium clavatum* in the shade of spruce trees.

Our next stop was at the south-western tip of Loch Drunkie (27/538038). *Pilularia globulifera* was absent, but it was particularly interesting to see such large quantities of *Isoetes echinospora* growing on the exposed, dry shore. *Dryopteris carthusiana* was noted on a nearby bank with *D. dilatata.* The south-western corner of Loch Venachar (27/545055) yielded more *Isoetes lacustris,* but unfortunately time did not permit us to investigate the blanket bog Nick Stewart discovered nearby, apparently containing much *Dryopteris carthusiana.*

On our last day we returned to Glen Falloch to survey Gleann nan Caorann. Beside the farm track (27/318199) *Oreopteris limbosperma* and *Athyrium filix-femina* were abundant, with *Pteridium aquilinum* covering the slopes above. *Blechnum spicant* was frequent, with some *Dryopteris dilatata* and *Phegopteris connectilis* under an oak tree. Further on *Dryopteris affinis* subsp. *cambrensis* and subsp. *borreri* were both noted, also *Gymnocarpium dryopteris.* A tiny plant of *Huperzia selago* was espied on the same rock as *Hymenophyllum wilsonii. Equisetum sylvaticum* grew in a wet flush nearby, and on a mossy rock was some *Selaginella selaginoides.*

We picnicked beside the picturesque highland river, Dubh Eas, then half the party departed back to the cars for tea. The rest of us cut across to another gully (27/313206) where we additionally recorded *Polystichum aculeatum* and *Polypodium vulgare,* the latter looking very drought-stricken on an oak tree. *Hymenophyllum wilsonii* was abundant on rocks and tree boles. We traversed the steep ravine and followed the Dubh Eas down to the viaduct carrying the railway over the river gorge. The bank below the viaduct kept Clive and Anthony occupied for some time, as it was a mass of *Dryopteris affinis* (all three subspecies) and *D. filix-mas,* with plants of their aptly named hybrid, *D.* x *complexa.*

After meeting up with the remainder of the party we drove south to Inverarnan, to see *Lycopodiella inundata* (27/316186). Having got our eye in for this clubmoss, we realised there were a lot of plants over a wide area of boggy ground around a small rocky stream. *Selaginella selaginoides* and *Huperzia selago* were also quite common. It was pleasing to find the pale butterwort, *Pinguicula lusitanica,* a contrast to the larger *P. vulgaris* which had become a familiar sight during the week.

Next we crossed the valley and explored the lower parts of Ben Glas Burn (27/321186), which forms a small stretch of the Perthshire/Dunbarton boundary. Ferns abounded on the sides of the ravine: *Blechnum spicant, Oreopteris limbosperma, Phegopteris connectilis* and *Asplenium viride, Athyrium filix-femina, Dryopteris dilatata, Polypodium vulgare, Polystichum aculeatum* and *Asplenium trichomanes* subsp. *quadrivalens. Hymenophyllum wilsonii* covered mossy rocks on the north-facing side. The slippery rocks made progress up the burn difficult and we climbed out, returning down the hillside. A ruined cottage was well-colonised with ferns, mainly *Cystopteris fragilis, A. trichomanes* subsp. *quadrivalens* and *A. scolopendrium,* the latter seen for the first time that week. Along the roadside it was interesting to note *Dryopteris carthusiana* growing between the blocks of the wall, an apparently dry situation.

After dining at the Inverarnan Drovers' Arms we made our last stop at Loch Lubhair (27/424268) to collect more *Isoetes* for electrophoretic studies. Darkness put an end to our search so we returned to Strathyre to press the last collections of the meeting.

On Sunday morning we left to go our separate ways after a very successful meeting. Pteridophyte species seen numbered 41, plus various subspecies and hybrids. Everyone felt satisfied; some had seen new areas, others new plants. All of us had contributed to furthering an understanding of the plants of the area through recording for Nick Stewart's Flora.

NORTH GWYNEDD WORKSHOP - 25-28 August

Nigel Brown

Thirteen members braved the August Bank Holiday travel trail and finally assembled on Friday evening at the Anglesey Arms Hotel overlooking the Menai Straits, Anglesey. A simple, relaxed welcome provided the opportunity to find out just what the fern workshop would entail - a pleasant mixture of background science, field trips and simple laboratory work.

On Saturday morning, our number now fifteen, we met in the field laboratory at Treborth Botanic Garden, owned by the University College of North Wales and situated on the south bank of the Menai Straits 4 km west of Bangor. After an introductory look at the possible origins and evolutionary relationships of ferns and fern allies, we travelled back over the Menai Straits to Cadnant Dingle, a privately owned mixed wood in a steep, sheltered valley which runs down almost to the shore, 23/559730. A few basics here to ensure that we were all speaking the same fern language - adjacent plants of *Asplenium scolopendrium, Polpodium interjectum, Dryopteris affinis* and *D. dilatata* clearly illustrated the different degrees of frond dissection. Nearby *Polystichum setiferum* highlighted the importance of indusial structure in distinguishing different genera e.g. *Dryopteris* and *Polystichum*.

A mixed canopy of horse chestnut, sycamore and elm gave shelter to large crowns of *Dryopteris affinis* overlooking the steepest sections of the river valley. Discussions centred upon the value and consistency of the shapes of lamina, pinnule and indusium in determining the different subspecies of *D. affinis.* We tentatively identified some plants as *D. affinis* subsp. *cambrensis* noting however, that many others showed characters somewhat intermediate between the proposed subspecies. We wondered how the shadiness of the site might influence the forms we puzzled over e.g. the degree of lobing of the pinnules, and to what extent the lack of out-breeding in these handsome ferns was creating and perpetuating distinctive local populations.

Back at the botanic garden, Caroline Brown provided us with a splendid buffet lunch after which we departed to the northern shore of Llyn Padarn in the Snowdonia National Park, 3 km north-west of Llanberis, 23/560624. An abandoned lakeside railway track provided more *Dryopteris* discussion especially over some impressive *D. affinis* subsp. *affinis.* Drip-drenched cuttings nurtured *Phegopteris connectilis* and *Oreopteris limbosperma,* whilst supportive slate walls held large populations of *Polypodium interjectum* and *Asplenium trichomanes* subsp. *quadrivalens,* and much smaller numbers of *A. ceterach* and *A. adiantum-nigrum. Nearby Phegopteris connectilis* and *Dryopteris dilatata* grew vigorously beneath birch and willow at the damp margin of a pool well-stocked with bogbean, bottle sedge and *Equisetum fluviatile.*

We then explored a small sessile oak wood situated on a bouldery north-east facing hillside 1 km away from the northern end of Llyn Padarn. A gushing stream created an especially moist microclimate and bryophytes carpeted every trunk and boulder. *Polypodium interjectum* grew abundantly here, chiefly as an epiphyte and we eventually saw small quantities of *Hymenophyllum wilsonii* growing on the base of an oak trunk.

Later, in the warmth and dryness of the laboratory at Treborth, we had plenty of opportunity to examine the specimens we had collected. We used binocular dissecting microscopes to appreciate surface features including indusial characters and compound microscopes to study sporangia and spores.

Sunday morning found us ready to explore the sea-cliffs of Fedr Fawr, near Penmon on Anglesey's eastern coast, 23/605820. Here calcareous deposits of glacial and quarried origin supported fine stands of *Equisetum telmateia* whilst hard boulders and outcrops of carboniferous grit nursed lush-fronded *Asplenium marinum* in their wave-splashed crevices. A handful of young *Osmunda regalis* plants hung in a fissure out of reach on the cliff above.

From Fedr Fawr we travelled westward to Red Wharf Bay, 23/5480. The farmhouse at Bryn Hyrddin, ½ km inland, shelters at the foot of a wooded ridge of chlorite-schist, its garden wall naturally enhanced with healthy clumps of *Asplenium ceterach*. Nearby sycamore and ash shelter the face of a small disused quarry which now lies quietly curtained with luxuriant, arching fronds of *Polypodium cambricum, P. interjectum* and *P.* x *shivasiae* interspersed with well-grown *Asplenium trichomanes* susbp. *quadrivalens*. In the old walls of a narrow, partially shaded lane bordering the wood we paused to admire long, finely acute fronds of *A. adiantum-nigrum* and the short triangular fronds of yet more *Polypodium cambricum*.

Northwards then to Traeth Lligwy 23/495872, a much smaller bay backed by a thin crescent of dunes where we compared three horsetail species - *Equisetum arvense, E. palustre* and *E. telmateia*. Following this inspection we felt ready to tackle a hybrid and our attention focussed on some vigorous well-branched shoots growing beneath willow scrub in a damp position on the landward side of the dunes. A few weeks earlier Mr R H Roberts, the BSBI's vice-county recorder for Anglesey, had carefully studied this same colony and concluded that it was the hybrid between *E. telmateia* and *E. palustre (E.* x *font-queri)*. Certainly the outward appearance of the population suggested this hybrid, with features such as the size and colour of shoots and number of ribs on the stem intermediate between *E. telmateia* and *E. palustre*. Later, microscopic examination of the internal arrangement of tissues and canals seemed to confirm Mr Roberts' determination, a notable new record for Wales. We retired happily to the Anglesey Arms Hotel for the official workshop dinner.

Monday found us once more in the Snowdonia National Park, this time in the spectacular glaciated valley of Nant Ffrancon. By kind permission of the National Trust we were able to admire vigorous clumps of *Dryopteris oreades* growing by a stream within the fenced enclosure surrounding an old copper mine at Gwaith 23/632633. Conveniently close enough to allow direct comparison were well-grown specimens of *Dryopteris affinis* subsp. *borreri* and subsp. *cambrensis* along with some *D. filix-mas* and *Oreopteris limbosperma*.

Our trail then took us onto the Gwydir Forest near Betwys-y-coed. Firstly we explored Cors Bodgynydd, a boggy nature reserve managed by the North Wales Wildlife Trust and home to three clubmosses - *Selaginella selaginoides, Huperzia selago* and most notably *Lycopodiella inundata* which is a great rarity in Wales. It is unusual to find these three species in the same small area, as their general soil and moisture requirements are very different. Here too was a chance to compare *Dryopteris carthusiana* with other species of *Dryopteris* seen during the weekend and to admire the flurry of yellow bladderwort flowers hoisted innocently above the peaty water whilst their insidious traps below awaited insect morsels.

An artificial but naturally well-vegetated reservoir once used to provide water for mining operations revealed *Isoetes echinospora,* clasped sporophylls bursting at the base with bright white megaspores. The sun shone warmly as we picnicked in view of the lake, trees and the mountains of Snowdonia.

Later that afternoon at the Hafna lead mine 23/781602 we climbed the steeply inclined disused workings where metallophyte species such as alpine pennycress pick out a living on polluted ground. A settling tank full of *Equisetum fluviatile* and giant clumps of *Dryopteris oreades* were notable finds. In the valley bottom we explored an extensive abandoned tailings dam choked with fine black sediment from the mines above and for the most part colonised by reeds, sedges and horsetails. *Equisetum palustre* was the commonest horsetail, followed by *E. fluviatile* and *E.* x *litorale.* One small patch of *E. arvense* prompted much speculation, its features suggesting a possible hybrid between *E. arvense* and *E. palustre* except that it lacked definite black-tipped teeth on the branches.

Our final stop was an old wash-out site associated with another abandoned lead/zinc mine further down the valley near Gwydir Castle 23/796610. Here a roadside wall was abundantly colonised by *Asplenium septentrionale* and *Polypodium vulgare* though competition from *Dryopteris filix-mas* (including a crested form) and purple moor grass was resulting in excessive shading of spleenworts near the base of the wall.

Some members of the group who were not travelling homewards that evening returned to the laboratory for a final session with the microscopes which included a look at the characteristic spiny-surfaced megaspores of *Isoetes echinospora.*

XV INTERNATIONAL BOTANICAL CONGRESS

The Organising Committee of the XVth International Botanical Congress wishes to announce that the XV IBC will be held in the Tokyo area during August and September, 1993: nomenclature session 23-27 August; general session 28 August-3rd September. The first circular of the XV IBC will be prepared in 1990 and distributed to those who are interested in the Congress. Requests for information and other questions and comments may be sent to the Secretariat at the address below.

Kunio Iwatsuki, Secretary General, XV International Botanical Congress Tokyo, Department of Botany, Faculty of Science, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan.

NEDERLANDSE VARENVERENIGING

Mr G Proper, a Dutch member of the BPS, has written to say that a new Fern Society was started in Holland in 1988. The Society is similar to the BPS in its aims and hopes to recruit both amateur and professional pteridologists as members. It is intended to hold formal meetings, encourage plant exchange, publish newsletters and a bulletin and to run a spore exchange. The BPS would like to wish the new Nederlandse Varenvereniging every success. For further information please write to: The Secretary, J J Comijs, Zaalboslaan 12, 6881 RH Velp, Holland (tel. 085-634416).

REGIONAL MEETINGS 1989

WEST MIDLANDS

A R Busby

"Welcome to Spring" Flower Show - 22-23 April. Our regular appointment at this show provides local members with their first opportunity of the new season to get together socially. Being so early in the season we are unable to display many hardy ferns so we have to rely on indoor ferns, however, this still provides plenty of interest for the visitors and also gives us a chance to display our Society's literature and information on our activities.

Thanks are due to the Solihull Horticultural Society for providing space and an inch or two of column space in the show schedule free of charge, to Ray Smith for spending time with me on the stand, and to our local members for dropping in to support us.

Visit to Jeff and Judith Whysall's Garden - 16 July. In response to Jeff and Judith's kind invitation, 18 members arrived at their home at The Green, Marfield, Leicester, to spend a busy afternoon enjoying their kind hospitality. Our time was well-spent looking at their garden, which, because of its elevated position, has several levels. Jeff has taken advantage of this, growing a varied mixture of shrubs, herbaceous plants and alpines, liberally sprinkled with hardy ferns. Jeff was pleased to show us around his greenhouses and frames. The former proved very interesting, with a wide selection of orchids and indoor ferns. Jeff explained that many of the ferns have been raised from spores obtained through the spore exchange scheme.

After a very large tea that Judith and family had prepared, Jeff offered to conduct us around the large quarry which adjoins their garden. During our foray we found common male, broad buckler and lady fern, and the ubiquitous bracken. What proved most interesting was the very large quantity of *Polypodium* which inhabited the many rocky fissures and ledges around the water-filled quarry. Unfortunately, because of the immaturity of the new fronds, it was difficult to decide which species it was.

It was sometime after 6 pm that we reluctantly said our goodbyes and departed to reflect on our journeys home all that we had enjoyed that afternoon. Our sincere thanks to Jeff and Judith and family for their kind hospitality in providing us with such an interesting afternoon.

Visit to Margaret and John Collins' Garden - 20 August. Nineteen members and guests attended the meeting at Margaret and John Collins' garden at Hazelwood Road, Acocks Green, Birmingham. Their garden contains many mature shrubs and is overlooked by a very large oak, all of which provide plenty of shade for growing ferns. Margaret is keen on propagation and takes full advantage of the Society's spore exchange scheme and her membership of both the Alpine Garden Society and the Hardy Plant Society means that she can take advantage of both their seed lists. Visitors rarely leave without something to prick out or pot-on, as we were soon to find out.

Margaret has recently added a conservatory to the side of the house where many spore and seed sowings are kept. This conservatory also provided a temporary home for many of Ray Smith's potted ferns which had returned only the day before from a very successful visit to the Southport Flower Show. For the second year running, Ray had won the trophy for obtaining the most points in the fern classes and local members had the opportunity to see the kind of standard of cultivation required for showing.

We all enjoyed our refreshments sitting in the afternoon sunshine on the lawn. Good weather, excellent food, a lovely garden and the pleasure of good fern-growing company, I was able to reflect on all this and appreciate why we do it. Our thanks to Margaret and John for their kindness and hospitality and for giving us such an enjoyable afternoon.

Visit to Matt and Margaret Busby's Garden - 24 September. A lovely late summer's day greeted the 22 members who attended our 'Open Day'. Our friends wandered around the garden commenting on the few ferns to be found, however, I was able to open the recently erected polytunnel which, I hope, will provide shelter for the young ferns I am hoping to raise from spores. There are two 6ft x 8ft greenhouses which perform different functions; one at the top of the garden that provides a home for ferns on the border-line of hardiness, while the second near to the house is home to a motley collection of alpines and my son's tomatoes.

After a quick tour of inspection, all 24 of us squeezed into our sitting-room to see two videos. The first was 'Ferns', produced by B A Thomas and M H Rickard for the Society, which describes all the British species and their habitats; the second video was a programme shown by a northern television channel featuring Jack Bouckley and his garden.

After seeing the videos, we had tea and browsed through many ferns that several members had kindly brought along for distribution. Later we walked round to the University of Warwick, Dept. of Science Education for a visit to their greenhouses. Here we were able to see a selection of tropical ferns and some spore sowings.

It gave Margaret and myself immense pleasure to play host to so many of our friends from the Society and our thanks go to them for responding so warmly to our invitation, especially as several of them had travelled a long distance to be with us.

LEEDS & DISTRICT

Once again we have had a very successful year's search among various ferny locations in Yorkshire and beyond. It was very nice to welcome members from many other parts of the British Isles to our trips, sometimes to 'the back of beyond'. My thanks to all who have made it a very enjoyable and instructive year and to those who have written the following excellent reports.

Jack Bouckley

Slei Gill, Arkengarthdale, Swaledale, North Yorkshire - 10 June. What commenced as a rather dull June day found twelve members and guests assembled at Raw, Arkengarthdale ("valley of Arkil's enclosure"), from where almost the entire route for the day's field trip could be traced, following the steep-sided valley of Slei Gill.

We first descended through the curiously-named hamlet of Arkle Town, with its long-disused burial ground, thence across the Arkle Beck, itself a tributary of the River Swale, joining the latter at Reeth. Turning eastwards and entering a mixed wood, the first ferns were soon found *(Dryopteris filix-mas, D. dilatata, Athyrium filix-femina* and on good authority, *D. affinis* subsp. *cambrensis),* and in the entrance to an old mine level *Cystopteris fragilis* was recorded, a not uncommon habitat for this somewhat delicate pteridophyte. The woods then opened out at the confluence of Slei Gill with the Arkle Beck, where the remains of an ore dressing plant were examined to reveal more *Cystopteris* covering the walls of the waterwheel pit. Heading northwards, we journeyed up the valley of

Slei Gill (sometimes called Farndale) discovering numerous relics of the long-defunct lead industry which have left their mark on the landscape in the shape of large spoil heaps and spectacular hushes (water-eroded trenches, often of very large size, a technique employed by the early miners in exposing veins of ore). Here of course occurred the ubiquitous bracken, together with the less frequent *Oreopteris limbosperma, Polystichum aculeatum, Asplenium trichomanes* and *A. ruta-muraria*. As the sun began to break through, lunch was enjoyed by a small waterfall, affording the chance to explore the limestone rocks in the vicinity, on which grew *Selaginella selaginoides,* and also to observe the bird life, including grey wagtails, redstarts, and ring ousels. One of the party, Paul Hackney from Ulster, was actually on holiday in the Dales, by happy chance staying in a cottage at Booze ("house by the bow or curve") of which more anon; he had a day or two earlier noted the presence of *Asplenium viride* in the valley head which I had not visited before. We therefore made our way upstream to yet another site of mining activity, where we did indeed see the green spleenwort growing prettily from a small limestone outcrop.

Our return, now in glorious sunshine, took us along the valley flank to that most delightfully-named cluster of cottages, Booze, where to our great pleasure, we were all invited to share refreshment kindly provided by Mrs Hackney. A single *Asplenium scolopendrium* had been spotted in a mine entrance, and we had also identified two horsetails, *Equisetum arvense* and *E. palustre*. The cars were eventually reached via Langthwaite - immortalized in the opening sequence of the earlier television series of "All Creatures Great and Small" - and a pleasant stroll along the streamside.

My profound gratitude to Mr and Mrs Hackney, who by sheer coincidence happened to be in the right place at the right time, and the four naturalists from Scunthorpe who contributed much to the non-pteridological wildlife we encountered (over 50 species of wild flowers for example); thank you everybody for attending this most enjoyable expedition.

R P H Lamb

Lister Park and Chellow Dene Reservoir, West Yorkshire - 8 July. Ten BPS members plus family met Frank Murgatroyd of the Halifax Scientific Society on a rather dull Saturday morning. Our first port of call was the Botanic Gardens at Lister Park.

These gardens, once containing a fine array of plants including the tulip tree *(Liriodendron* sp.) and a variety of herbs, are unfortunately now very run down and overgrown, there being very few labels but plenty of weeds! However, a fine stand of *Onoclea sensibilis* was still to be found near the entrance along with several plants of *Osmunda regalis,* a large *Asplenium scolopendrium,* a crested variety of *Dryopteris filix-mas,* and *Polystichum setiferum. Equisetum arvense* grew as a weed. To the left of the garden runs a stream, the banks of which have proved a favourable habitat for spores from the garden to germinate and grow. Several plants of *Osmunda regalis* have established themselves here, alongside both red- and green-rachised lady fern *(Athyrium filix-femina), Dryopteris dilatata* and a plant of *Polystichum setiferum.*

We then moved on to the Chellow Dene Reservoirs. The lower level reservoir, now empty, proved a remarkable sight. Several wall ferns grew abundantly here. First there were many plants of *Asplenium ceterach,* vast areas of *A. ruta-muraria* and *A. adiantum-nigrum* - all the more spectacular since they grow so near to the centre of industrial Bradford. Lady fern, *Dryopteris affinis* subsp. *affinis* and *Asplenium trichomanes* subsp. *quadrivalens* also flourish as does a rather interesting crisped male fern with yellowish colouring along the veins of the pinnae.

Having savoured this wonderful ferny area we climbed to the second level reservoir to savour lunch! Whilst there was nothing so spectacular to be seen as at the first reservoir we were able to show Anita Brownless, a new member, *Blechnum spicant* to add to her list of ferns seen. We tried to find sporing *Pteridium aquilinum* but the plants were in shade and not a spore was to be found. Having consulted the British Museum Fern Crib we concluded that this bracken was the widespread type and identified another *Dryopteris affinis* as subsp. *cambrensis.* Large plants of *D. dilatata* grew abundantly, as did lady fern and male fern.

We came across a very interesting area full of reed canary grass *(Phalaris arundinacea),* meadow-sweet *(Filipendula ulmaria)* and valerian *(Valeriana officinalis)* growing amongst which was a large area of *Equisetum sylvaticum.* This brought our species count up to fourteen ferns and two fern allies - not bad going for an industrial area and a very interesting and enjoyable outing for the Leeds and District group of the BPS. Thanks again Frank.

M Rothwell

Silverdale, Lancashire - 29 July. Ten of us gathered at Reg Kaye's nursery in Silverdale on a Saturday morning which showed little promise weather-wise. Indeed we did get a bit moist as we toured Reg's empire but there was plenty to distract us from the rain as might be expected. We were first taken along a narrow ledge past a disused glasshouse into which we all peered in the hope of seeing some gorgeous fern sprouting, uninvited and unknown in the cobwebbed darkness but we were hustled by on to the 'Kaye memorial barrow'. This ovate-lanceolate raised bed had been humorously dedicated to the interment of three great twentieth century pteridologists, each with his favourite bottle between his knees. It was in fact a stunning bed of smaller fern varieties shown off to very best advantage, at knee height with a comfortable pathway. I could describe Reg's nursery in detail but you have either been and seen or you should be off there at the next possible opportunity. Suffice it to say that we were treated to a comprehensive tour of the estate to see open limestone pavement covered with ferns and alpines, beds chock full of larger shade-loving species beneath huge trees which gave just the right shade for optimal growth, and even Reg's garden where he keeps some specials, including dear old Fred Jackson's precious *Asplenium* hybrids. It was a privilege to be conducted by the grand master of fern culture who planted some of this land over sixty years ago!

We bade Reg farewell and, after taking our various lunches, set off towards Arnside and John Mashiter, our second sprightly octogenarian of the day. This gentleman had written to our leader Jack Bouckley inviting the BPS who, led by Jimmy Dyce, had visited in 1981.

As soon as we arrived we were admiring a fine potted *Asplenium marinum* sitting next to a lovely large *Davallia* outside his garage. He took us around his garden where he keeps some of his ferns which are less likely to thrive on the local limestone crag scenery and thence to his 'cliff'. Cliff is what it is, across the road from the house and covered with ferns and other limestone lovers including a rampant colony of baneberry/herb christopher *(Actaea spicata)* a rather rare, but familiar inhabitant of limestone pavement. Home-grown holly ferns were everywhere with *Cystopteris fragilis, C. bulbifera, Polypodium, Athyrium* and 'scollies' in abundance. We had not known this gentleman before but we certainly knew we had a pteridologist for a host now.

Having inspected the cliff in detail we set off for Grubbins Wood, a reserve that John manages for the Cumbria Wildlife Trust, only yards from his house. The first we saw of this fabulous mixed woodland was a bank of *Asplenium scolopendrium* of breathtaking luxuriance. It was quite obvious that there should be, at worst, a minor variety here and, sure enough, it was not long before a lightly but regularly crested form was discovered. Thence the species list began to build up rapidly with *Dryopteris dilatata, D. filix-mas, D. affinis* (perhaps two of the subspecies) *D.* x *complexa, Pteridium aquilinum* and *Athyrium filix-femina,* two of which were rather neatly crested.

We were taken along a route which let us see as much of the wood as possible. Among the very diverse trees there were oak, ash, yew, sycamore (very reasonably being weeded out) with wild service tree and small-leaved lime which were both at their northerly limits. Thanks to the varying soil conditions over the carboniferous limestone bedrock we found *Blechnum spicant* and *Oreopteris limbosperma* as well as the calcicolous *Polystichum aculeatum,* and *P. setiferum,* the latter being represented by one fine 'divisilobum' which, one wonders, might have originated from that spore bank at Silverdale? Other species seen were *Dryopteris carthusiana* (just one) and *D. submontana* (eleven in a small area). There was a little shrivelled *Polypodium* and *Asplenium trichomanes, A. ruta-muraria* and a small horizontal cleft full of *A. adiantum-nigrum.* Before we left the wood I accompanied John down the sea-cliff to see what we might find. One lonely *A. ceterach* hung on to a dry rock but below it I found what I never really believed from leafing through Druery, several plants of hart's tongue in which the leaf apex was deformed into a crested cup beneath the blade, the midrib projecting as a short spine. They were not as spectacular as the old 'cornutum' varieties, but Jack will grow some spores on and – who knows?

That was the end of the official trip and we thanked John for a most entertaining afternoon, and saw off our BPS friends, leaving just two Bouckleys and one Merryweather. We headed for Grange-over-Sands to seek overnight accommodation and look up an old friend of the BPS, Les Dugdale, who entertained us with a fine fern collection, dominated by his splendid *Adiantums.* This man produces wondrous mysteries and we left with a car bootful of 'pteridogifts'.

Next day the Bouckleys and I sat in our cars while the rain wore itself out and, despite that unpromising start, the day was fine and sunny. Our first port of call was the nature reserve Roudsea Wood. This sits on a mixed bedrock of limestone and slate with varying altitude which produces a wide diversity of habitat: acid and basic, birch and yew wood, hazel coppice and rich fen. We were charmed by the variety of ferns, astonished by the aged, massive gnarled yews, and delighted by the fenland where beech fern luxuriated and where, to our delight, we found the royal fern. I am sure that we went there, in the company of the warden, when centred at Sedbergh 7-14 September 1974. When we went before I think we found *Dryopteris expansa,* not to mention the unique sedge *Carex flava,* neither of which we found this time.

In the afternoon we went after the Meathop *Adiantum capillus-veneris* which still thrives on the cliffs on the north bank of the river Kent, not to mention (in stunted form) on the railway wall. *Asplenium marinum* also grows here with specimens of *Sorbus anglica,* local on carboniferous limestone and the rare endemic whitebeam, *Sorbus lancastriensis.*

That was enough for this very rewarding weekend. A welcome mug of tea was followed by a return to Silverdale to pick up our purchases before the weary journey home. Thanks again, Jack, for a splendid weekend.

J Merryweather

North Yorkshire Moors - 12-13 August. On Friday evening a small body of us met at the Falcon Inn near Cloughton, prior to a couple of days exploring the Yorkshire Moors north-east of Scarborough. Richard Unett and Jack Bouckley were leaders for the weekend.

Together with a local botanist, Nan Sykes, and her friend, we started off on Saturday morning to search the wooded valley of Stoupe Beck, some strictly private property where we had been given permission by the owner to do a survey of the ferns and other plants. It was hard work as we made our way along this steep-sided valley which is thickly covered with vegetation of all sorts growing lushly in the often boggy ground. *Dryopteris filix-mas* and *Polystichum setiferum* were quite common but there were also a number of *D. dilatata* and *D. affinis* subsp. *borreri,* some of which were up to six feet high. Dotted about were *Athyrium filix-femina* and a few *Polypodium vulgare* and *Asplenium scolopendrium* including some cristate forms. Also present was *Equisetum telmateia,* including a couple of stands which were only about eight inches in height.

We had lunch in a local inn and then went to another site which the Woodland Trust had asked us to survey - an area called Castlebeck and Scar Woods. This was much easier going as there is a public footpath which more or less follows the course of the beck. Our first sightings were *Equisetum arvense* and *E. sylvaticum.* There was plenty of *Dryopteris filix-mas, D. dilatata* and *D. affinis* subsp. *borreri.* The *Blechnum spicant* was plentiful and growing very vigorously. *Oreopteris limbosperma* made an appearance and then our new member, Anita Brownless, spotted our first and only *Polypodium interjectum* of the weekend; we later saw *P. vulgare* and Richard Unett spotted *Dryopteris carthusiana* - a new record for the area.

On Sunday morning we travelled south a few miles to Thieves Dyke, another steep-sided dell covered with undergrowth and many trunks of fallen trees. At least it was dry due to the lack of rain. The Dyke leads down to a stream called Breaday Gill. There were not many fern species down here, just many plants of lady fern, male fern, broad buckler and golden-scaled male fern, both subsp. *borreri* and *affinis.* We were hoping to find beech or oak ferns but were unlucky, however, we did see some beautiful stands of *Polystichum aculeatum.* At the stream we divided into two parties, one going upstream and the other downstream. Nothing new was seen downstream but the other party saw *Blechnum spicant, Polystichum setiferum* and *Asplenium scolopendrium.*

On Sunday afternoon we worked along a narrow dell through which the little-used footpath from Coomboots to Hackness runs. Regarding fern species the only addition to the weekend was a red-stemmed *Athyrium filix-femina* but I also saw a stand of about eight *Asplenium scolopendrium* 'transverso multifidum' (according to Lowe's *Our Native Ferns*). I took a frond, and the spores from it have already produced a good prothallial growth, so hopefully it will grow true to form.

The weekend finished after a few members had looked around an old quarry near to Coomboots where nothing of interest was found.

Jack Bouckley

SOUTH-EAST

Paul Ripley

13 Star Lane, St. Mary Cray, Kent - 24 February. Ten members enjoyed the generous hospitality of Grace and Pat Acock for an evening of slides, chat and fern videos. We had the opportunity to see the Society's video, and were also privileged to preview a video on horsetails, obtained by Jennifer Ide and to be shown at the autumn paper-reading meeting. The quality of photography and time-lapse sequences of spore production one could only describe as truly stunning.

Martin Rickard's discovery of *Asplenium trichomanes* subsp. *pachyrachis* was briefly discussed. The meeting succeeded in whetting many appetites for the summer.

Box Hill and Leith Hill, Dorking, Surrey - 25 June. Margaret Harris ably led a group of 14 members and guests on a visit to areas well-known botanically but not previously visited by the South-East group.

In the morning, a hanging wood to the west of Box Hill near West Humble (41/156533) was explored. Good specimens of *Asplenium ruta-muraria, A. trichomanes,* and *A. scolopendrium* were growing on the railway bridge by West Humble station, and *A. adiantum-nigrum* was later seen on the parapet of the railway bridge over the River Mole. *Pteridium aquilinum, Dryopteris dilatata* and *D. filix-mas* were abundant in woodland, but on this chalk substrate we did not see *D. affinis.* Some very fine plants of *Polystichum aculeatum* were seen on the wooded slopes above the river and later, *P. setiferum* and *Equisetum arvense* were found near the river.

After lunch, a brief stop at the Windy Gap car park (41/132433), Leith Hill, yielded fine stands of *D. dilatata* and *Athyrium filix-femina* but disappointingly no *D. carthusiana.* However, later exploration of the western slopes of the hill revealed both these *Dryopteris* species in spite of generally dry conditions, with almost certainly the hybrid *D.* x *deweveri. Blechnum spicant* was common, as were *Dryopteris filix-mas* and *D. affinis* (subsp. *borreri*?). Needless to say *Pteridium aquilinum* was ubiquitous. There is a huge area of acid woodland here (most interesting contrast from the morning's chalk) and worth extensive exploration.

We were most grateful to Margaret Harris not only for her obviously thorough homework but also for entertaining us after the meeting to a lovely tea in her beautiful and interesting garden.

Fore Wood, Crowhurst, East Sussex - 2 September. Eleven members and guests met to visit Fore Wood, Crowhurst, East Sussex, an RSPB Reserve extending over a large wood, coppiced in parts, and undisturbed in others, which provides a range of habitats suiting a wide range of bird and insect life, especially butterflies.

A steep wooded valley towards the eastern edge of the wood was followed. *Dryopteris filix-mas* was present but dominated by *D. affinis* subsp. *borreri.* In the damp areas of the stream valley *Athyrium filix-femina* was seen, and *Dryopteris dilatata* was abundant. *D. carthusiana* was present in patches, together with at least one sizeable clump of the hybrid *D.* x *deweveri. Blechnum spicant* completed the flora in the valley, and was also seen, together with *D. carthusiana* and *Pteridium aquilinum,* in the drier areas above the valley.

At the head of the valley, a magnificent bank of *Dryopteris aemula* was flourishing on the west-facing cliff in spite of major tree-falls. Large areas of nursery fields of *Blechnum* and *D. aemula* were present in places. Two large mature specimens of *Polystichum setiferum* completed the flora in this upper gully, but *Hymenophyllum* was not found.

An interesting find was a single foliose *D. affinis.* Such striking specimens are not uncommonly found in woods in this area and merit further study. Their distinctiveness and lack of resemblance to neighbouring *Dryopteris affinis* plants suggest either a hybrid or a subspecies - *D. affinis* subsp. *robusta,* rather than just a variety of subsp. *borreri.*

In the afternoon we enjoyed a fascinating visit to Rosemary Hibbs' garden. Ferns were everywhere and the exhibitions of local history and railway memorabilia, including a working signal box (the now defunct "Cuckoo Line" from Eridge to Eastbourne passed the garden), paid tribute to a family with diverse and highly diverting hobbies. We were most grateful to the Hibbses both for suggesting and organising a visit to a beautiful wood, and for kind and generous hospitality. (My daughters also enjoyed their swim!)

SOUTH-WEST

Leader: M Potts

No report submitted.

SOUTHPORT FLOWER SHOW DIAMOND JUBILEE

17-19 AUGUST

A R Busby

This year marked the 60th Southport Flower Show and it is with much pride that this Society can boast that it has exhibited at every single show since its inception in 1924. It is the only show with competitive classes for ferns and long may it continue to do so.

The ferns exhibited this year were obviously suffering from the effects of the long hot summer and it must be said that many of the plants were of such poor quality that they should not have been on the show bench. There was still some carelessness resulting in one disqualification and some of the plants had received little 'gardening' which, had a few moments been spent attending to it, would have improved their appearance in the judges' eyes. However, it is important that this competition is kept alive, so we do thank the exhibitors for continuing to enter the fern classes with all the hard work that it entails.

This year's judges were A R Busby and R G Key. The prize winners are listed below.

Class 5	Six Hardy British Ferns (dissimilar): 3rd D J Kershaw (1 entry)
Class 6	Six Greenhouse Ferns (dissimilar) 1st D J Kershaw, 2nd R J Smith (2 entries)
Class 7	Three Hardy British Ferns: 2nd D J Kershaw, 3rd R J Smith (2 entries)
Class 8	Three Foreign Ferns hardy in Great Britain: 1st D J Kershaw, 2nd R J Smith, 3rd B Russ (3 entries)
Class 9	Three *Asplenium scolopendrium* (three varieties): 2nd R J Smith, 3rd B Russ (2 entries)
Class 10	Three *Polypodium* (three varieties): 2nd R J Smith (1 entry)
Class 11	Three *Polystichum:* 2nd R J Smith (1 entry)
Class 12	Three *Athyrium* (three varieties): 3rd B Russ (3 entries)
Class 13	Three *Dryopteris* (three varieties): 1st B Russ, 3rd D J Kershaw (2 entries)
Class 14	Three *Asplenium* (excluding *A. scolopendrium):* 2nd R J Smith (2 entries)
Class 15	One British Fern (any kind or variety): 1st R J Smith, 2nd Mrs T A Shorrock, 3rd D J Kershaw (3 entries)
Class 16	One Greenhouse Fern: 1st Mrs T A Shorrock, 2nd D J Kershaw, 3rd R J Smith (5 entries)

The 'Challenge Trophy' awarded to the exhibitor gaining the most points in the fern classes was won by R J Smith.

My thanks to Jack Bouckley and Ray Smith for helping with the staging and manning of the Society's stand.

I would welcome any enquiries about exhibiting ferns at Southport Flower Show and will advise on the identification, growing and presentation of exhibits.

NCCPG CONFERENCE, LEEDS - 15-17 SEPTEMBER

The National Council for the Conservation of Plants and Gardens held their tenth anniversary conference at Horsforth, Leeds on the dates mentioned above. After delegates had registered they were taken by bus to the Civic Hall, Leeds where the Lord Mayor and Lady Mayoress had invited them to attend a Civic Reception - and very good it was, with excellent company, food and liquid refreshments.

On the Saturday representatives from Australia, Canada and New Zealand spoke about their efforts regarding conservation of plants. There were talks by Roy Lancaster on 'The Plant Hunters' contribution', Dr Wyse-Jackson on 'The Role of Botanic Gardens', G Lloyd Lucas about 'The World Problem' and R I Beyer telling how to secure an unlimited resource for the future. 'The Role of Local Authorities' was dealt with by T E Exley and then a nurseryman, C Sanders spoke about 'The Trade - an essential element'. Specialist Society involvement was spoken about by The IDS (trees), the BPS and the Hardy Plant Society.

Sunday morning was the day for talking about the conservation of gardens with D Jacques of Garden Heritage, Mrs E Banks on the need for research and central records, D J Sales from the National Trust and Mrs M Drummond from the Hampshire Garden Trust.

The BPS was well represented by Gwladys Tonge, Margaret Nimmo-Smith, J Loraine and myself. The Society had a stand of ferns which created a lot of interest among the delegates, and Margaret and I answered a lot of queries about ferns and the Society.

Jack Bouckley

OBITUARY

PIETER GERARDUS JOHANNES DE JONCHEERE

1 July 1909 - 8 January 1989

The death of Pieter, our Member since 1963, was sad news. A very warm, long and informative notice was published in *IAP News* (Newsletter of the International Association of Pteridologists) No. 4: 7 (Dec. 1988).

J A Crabbe

NEW MEMBERS 1989

(A full list of members was published in the BPS Bulletin Vol. 3, part 2)

ACKERS, Mr R G, The Old Bakehouse, Abinger Bottom, Abinger Common, Dorking, Surrey
RH5 6JN

BELL, Mr E S, Meadowside, Kepple Lane, Garstang, Preston, Lancs. PR3 1PB
BOOTH, Mr R D, 31 Sydney Road, Gosport, Hants. PO12 1PL
BORDEAUX UNIVERSITE, attn. Le Directeur Adjoint, U.E.R. de Biologie, Centre d'Ecologie Montagnarde de Gabas, 64440, Laruns, France
BOYD Mr A M, 7 St. James Road, Torquay, South Devon TQ1 4AZ
BRANCH, Mrs P S, Lephins, The Ridgeway, Wantage, Oxon. OX12 8LX
BRISBANE, Mr M J, The Lee, Knighton, Powys LD7 1NE
BROIN, Mr A A R, Clos Marion, St Maurice les Couches, Burgundy 71490, France
BROWNLESS, Miss A L, 35 Brownswood Road, Finsbury Park, London N4 2HP
BRYAN, Mr A C, 9 Tan-y-Foel, Bethesda, Gwynedd LL57 3UL
BUFFINGTON, Mrs C L, 1832 Atherton Drive, Decatur, Georgia 30032, U.S.A.
CAMERON, Mr D G, 36 Cumberland Park, London W3 6SX
CONGREVE Mrs J C, Hales Cottage, Hales, Market Drayton, Shropshire TF9 2PP
COTGREAVE, Mr P, 4 St. David's Close, Gobowen, Oswestry, Shropshire SY11 3JF
CUPITT, Mrs E S, Yellow Birch, Luddenden Foot, Halifax, West Yorks. HX2 6SJ
CURRANT, Mr A P, 13A Copers Cope Road, Beckenham, Kent BR3 1NE
DREW, Mr R W, 17 Roberts Road, Laindon, Essex SS15 6AY
FRERICKS, Mr N, Posenerstr. 9, Duisburg 1, 4100, West Germany
GADDIS, Mrs N M, 52 Lakeview Avenue, Piedmont, California 94611, U.S.A.
GILES, Mr N, Rumsey Gardens, Drift Road, Clanfield, Portsmouth, Hants. PO8 0PD
GLOVER, Mr P C, 43 Ferndale Road, Hall Green, Birmingham B28 9AU
GOLDING, Ms Y C, Biology Dept., University of York, Heslington, York YO1 5DD
GROUNDS, Mr R R P, Apple Court, Hordle Lane, Lymington, Hants. SO41 0HU
HALLEY, Mr R, 1418 Park Row, San Diego, California 92037, U.S.A.
HANCOCK, Mr A, 12 Sparch Hollow, Newcastle-under-Lyme, Staffs. ST5 9PA
HENDRIX, Mrs D, 2551 W. Kingsfield Road, Cantonment, Florida 32533, U.S.A.
HILL, Dr D A W, Gwynfryn, Colley Way, Reigate, Surrey RH2 9JH
HOLLY, Miss E F, 38 Kings Road, Henley-on-Thames, Oxon. RG9 2DG
KAY, Mr G M, 4 Geneva Road, Bramhall, Stockport, Cheshire SK7 3HT
KELSALL, Miss C J, Gowan Beck, 1 Ings Hall, Kendal, Cumbria LA8 9PZ
KENCHINGTON, Mr M A, 82 Whitsbury Road, Fordingbridge, Hants. SP6 1LA
KNOX-THOMAS, Ms E, The Tollhouse, 1 Llanbadarn Road, Aberystwyth, Ceredigion, Dyfed SY23 1EJ
KUHEANA, H, 147 Nene Street, Hilo, Hawaii 96720, U.S.A.
LEES, Mr R M, 53 Dillwyn Road, Sketty, Swansea, West Glamorgan SA2 9AH
LEWIS, Mr M H, Flat 4, Welbeck Street, London W1M 7PB
LONDON UNIVERSITY BOTANIC GARDEN, attn. Mr B A Gale (Curator), Egham Hill, Egham, Surrey TW20 0BN
LORDING, Mr T A, 17 Hill Rise, Crowborough, East Sussex TN6 2DH
LUCKSBRIDGE NURSERIES, attn. Mr D Compton, South Drove, Spalding Common, Spalding, Lincs. PE11 3ED
MANDT, Mrs F, Godesberger Allee 68A, Bonn 2, D-53, West Germany
MANTHORPE, Mr P J, The Hermitage, Church Hill, Haddiscoe, Norwich, Norfolk NR14 6PF
MASON, Mrs E O, Bridge Farm, Churchill, Kidderminster, Worcs. DY10 3LS
McCREESH, Mrs L, Riversdale House, Birkacre, Chorley, Lancs. PR7 3QD
MURPHY, Miss R J, Shang-ri-la, Reskadinnick, Camborne, Cornwall TR14 0BH
NUNN, Mrs N D M, 75 Hursley Road, Leigh Park, Havant, Hants. PO9 4RF
PALMER, D D, 1975 Judd Hillside Street, Honolulu, Hawaii 96822, U.S.A.
PERONI, Dr G, Via Vignazza 18/B, Besano (VA) 21050, Italy
PETO, Sir H, Stream House, Selborne, Alton, Hants. GU34 3LE
RICHARDSON, Ms S A, Tallinn, 12B St. Martin's Avenue, Epsom, Surrey KT18 5HS
ROSS, W E, 7505 Eureka Avenue, El Cerrito, California 94530, U.S.A.
RUMLEY, Dr P T J, 19 Four Acres, Old Town, Stevenage, Herts. SG1 3PL
SCOTT, Mrs W, 31 Mulberry Hill, Shenfield, Brentwood, Essex CM15 8JS
SCROGGIE, Dr I M R, The Old School House, Badachro, Gairloch, Ross-shire IV21 2AA
SEFTON, Metropolitan Borough of, attn. Mr B C J Grinney, Recreation and Amenities Dept., Pavilion Buildings, 99-105 Lord Street, Southport, Merseyside PR8 1RJ
SHAWCROSS, Mrs B, Misston House, Moat Lane, Rixton, Warrington, Cheshire WA3 6ED
SMITH, Mr A, 17 Linda Grove, Cowplain, Portsmouth, Hants. PO8 8UX
SNUDDEN, Mr M J, 18 Parkfield Grove, Beeston, Leeds, West Yorks. LS11 7LS
STARK, Mr G, Woodlands Cottage, Summerbridge, Harrogate, North Yorks. HG3 4BT
TATHAM, Mrs M A, 17 Oaktree Way, Little Sandhurst, Camberley, Surrey GU17 8QS
TAYLOR, Mrs A, Orange Farm, Kilmersdon, Radstock, Bath, Avon BA3 5TD
TINSTON, Mr D J, 46 Giantswood Lane, Congleton, Cheshire CW12 2HQ
TREBAH GARDENS, attn. Mrs J Bird, Head Gardener, Mawnan Smith, Falmouth, Cornwall TR11 5SJ
TYSON, Mrs M J, The Orchard, Woodseats Lane, Charlesworth, Via Hyde, Cheshire SK14 6DP
WHITE, Mr A, Cooks Farm, Nuthurst, Horsham, West Sussex RH13 6LH
WHITTAKER, Miss M P, 99 Lakeway, Blackpool, Lancs. FY3 8PE
WILLIAMS, Mr & Mrs B & M, 20 Melbourne Court, Welwyn Garden City, Herts. AL8 6LL
WILSON, K A, Dept. of Biology, California State University, Northridge, California 91330, U.S.A.
WINSLAND, Mr D C, c/o Harefield Lodge, Plumley, Ringwood, Hants.
WITTS, Ms B, 15 Portland Road, Stoke, Plymouth, Devon PL1 4QW
WOOD, Mr M M, Woodlands, Wembury Road, Wembury, Devon PL9 0DQ

MEETINGS 1990

Meetings Secretary: A C Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P J Acock, J M Ide, A C Pigott, P H Ripley

Saturday 3 March
Annual General Meeting & Spring Indoor Meeting - London
Location: Chelsea Physic Garden
Leader: Anthony Pigott Time: 14.00

Saturday 19 May
Indoor Meeting - Kew
Location: Lower Nursery, Royal Botanic Gardens, KEW, Surrey TW9 3AE
Leaders: Peter Bradley/Josephine Camus
Time: 14.00

Saturday 26 May-Saturday 2 June
Week Overseas Field Meeting - Brittany
Leaders: Paul Ripley/Remy Prelli

Friday 20 July-Sunday 22 July
Weekend Field Meeting - Isle of Wight
Leaders: Pat Acock/Bill Shepard
Centre: Newport Quay Hotel, 41 Quay St., Newport, I.O.W.
Time: 19.30 on the Friday evening; 09.30 all other mornings.

Saturday 4 August-Saturday 11 August
Week Field Meeting - North-East Scotland
Leader: Steve Munyard
Centre: Profeits Hotel, Dinnet, Aberdeenshire AB3 5JY
Time: 19.30 on the Saturday evening; 09.30 all other mornings.

Thursday 16 August-Saturday 18 August
Southport Flower Show
Further Info: A R Busby

Friday 14 September-Sunday 16 September
Weekend Meeting - Eastern Glamorgan
Leaders: Barry Thomas/George Hutchinson
Centre: Imperial Hotel, 132 Newport Road, Cardiff CF1 3NP
Time: 19.30 on the Friday evening; 09.30 all other mornings.

Saturday 13 October
Autumn Indoor Meeting - Warwick University
Location: Warwick University, Department of Science Education, Westwood, Coventry CV4 7AL
Leader: Matt Busby Time: 11.00

For full details of these meetings and available accommodation please consult your Meetings Programme sheet.

REGIONAL DAY MEETINGS

If you would like details of additional meetings in the following areas, please contact the local organiser, enclosing a stamped, addressed envelope.

South-west England Christopher and Mary Potts, 4 Kennel Lane, Webbington, nr Axbridge, Somerset. Tel. 093 472 545.
West Midlands A R Busby, 16 Kirby Corner Road, Canley, Coventry, CV4 8GD. Tel: 715690.
North-east England J H Bouckley, 209 Woodfield Road, Harrogate, N. Yorks., HG1 4JE.
South-east England P H Ripley, 12 Farm Lane, Tonbridge, Kent, TN10 3DG.

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1990 SOUTHPORT FLOWER SHOW
The Organisers extend all good wishes for a successful 1990
Classes for your Society's special interests are available
Total Horticultural Prizes awarded for 1989 Value over £120,000
16th, 17th, 18th AUGUST 1990
Schedules and further information from:
The Flower Show Secretary
Dept. 11, Town Hall, Lord Street, Southport, Merseyside, PR8 1DA

The British Pteridological Society
BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 4 NUMBER 1

1990

PTERIDOLOGICAL
BRITISH
SOCIETY

CENTENARY

1891 ~ 1991

Edited by A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY

Officers and Committee for 1990

President: Dr B.A. Thomas
President Emeritus: J.W. Dyce

Vice-Presidents: J.A. Crabbe, A.C. Jermy, R. Kaye, G. Tonge

Honorary General Secretary: A.R. Busby, 'Croziers',
16 Kirby Corner Road, Canley, Coventry, CV4 8GD
(Tel: Coventry 715690)

Assistant Secretary (Membership) and Editor of the Bulletin: Miss A.M. Paul,
Department of Botany, The Natural History Museum,
Cromwell Road, London, SW7 5BD

Treasurer: Dr N.J. Hards,
184 Abingdon Road, Didcot, Oxon, OX11 9BP

Meetings Secretary: A.C. Pigott,
43 Molewood Road, Hertford, Herts., SG14 3AQ

Editor of the Fern Gazette: J.A. Crabbe
Material for publication should be sent to Department of Botany,
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Leinthall Starkes, Ludlow, Shropshire, SY8 2HP
assisted by J.W. Dyce

Committee: P.J. Acock, P.G. Barnes, J.H. Bouckley, J.M. Camus, C.R. Fraser-Jenkins, J.M. Ide, M. Nimmo-Smith, R.N. Timm, Dr T.G. Walker, J.R. Woodhams

Fern Distribution Recorder: A.J. Worland, Harcam,
Mill Road, Barnham Broom, Norwich, Norfolk, NR9 4DE

Spore Exchange Organiser: Mrs M. Nimmo-Smith,
201 Chesterton Road, Cambridge, CB4 1AH

Plant Exchange Organiser: Mrs R. Hibbs,
30 London Road, Hailsham, East Sussex, BN27 3BW

Archivist: N.A. Hall, 15 Mostyn Road, Hazel Grove, Stockport, Cheshire, SK7 5HL

Booksales Organiser: J.W. Dyce, 46 Sedley Rise, Loughton, Essex IG10 1LT

Trustees of Greenfield Fund: A.R. Busby, Dr N.J. Hards, Dr B.A. Thomas

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £12.50, Personal Members not receiving the *Fern Gazette* £9.50; Student Members £7; Subscribing Institutions £20. Family membership in any category is an additional £2. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £3 extra to cover bank conversion charges). Airmail postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: Centenary logo designed by Nicola Plummer.)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 4 1990 No. 1

SECRETARIAL NOTES

100 YEARS OLD - 1991 is the British Pteridological Society's first centenary! Ours is the oldest fern society in the world and the committee has put an enormous amount of time and effort into plans to celebrate this milestone. One of the *Bulletin* inserts is a calendar of special events and meetings throughout 1991 over the whole of the British Isles. We hope you will come along and enjoy these. Why not publicise them through your local natural history and horticultural groups - non-members are always welcome at our meetings. Items of merchandise bearing the centenary logo are now available (see enclosed order form) and these should be on sale at most meetings.

COMMITTEE VACANCIES - In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1991. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 31 August 1991.

SUBSCRIPTIONS 1991 - Members are reminded that subscriptions for 1991 are due on the 1st January 1991 and should be paid to the Assistant Secretary (Membership), British Pteridological Society, ^{c}/o Dept. of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL - Our journals can be sent by airmail to overseas members, provided they advise the Assistant Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY - Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. There are two transferable tickets available for all RHS Shows other than the Chelsea Flower Show. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE - The *American Fern Journal,* a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND - This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS – Now these long winter's evenings are upon us there is nothing quite like a little armchair ferning. Over the years I have found that there is nothing better to chase away winter blues than reading through past issues of the Society's journals. Here is a chance to escape to sunnier climes or come to a better understanding of details of the fern world. If you would like to buy back numbers, please write to Mr Acock for a price-list or send £5 for a bumper bundle of assorted issues!

WANTED – If you have finished with copies of the *Fern Gazette* Vol. 10, Pt. 3 or *BPS Bulletin* Vol. 1, No. 3, he is willing to buy these back as we have sold out of these parts and many members and subscribers are wanting to complete their collections.

Contact Patrick Acock, 13 Star Lane, St. Mary Cray, Kent, BR5 3LJ with your orders or offers of back numbers.

BINDERS for the BPS BULLETIN and PTERIDOLOGIST – Binders for volumes of the BPS *Bulletin* and *Pteridologist* are available from the General Secretary. The *Bulletin* binders are attractively produced with red hardboard covers and gold blocked lettering on the spine: only £5 each, postage and packing including.

Binders for the *Pteridologist* are available with mustard hardboards and gold blocked lettering on the spine. Each binder holds one volume (six parts). £5 each including postage and packing. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby.

BPS VIDEO "BRITISH FERNS"

With over fifty species of ferns the British Isles has a remarkably varied fern flora. Many species have distinctive distributions reflecting regional variations in environmental conditions. In particular the cool relatively damp environments of the North and the mild Western fringes of Britain bring together species typical of Atlantic, Arctic and Alpine regions, resulting in a fern flora that is unique to the British Isles.

This twenty-five minute video shows most of our native ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

The video has been funded by Schering Agriculture and the National Museum of Wales. It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

COMPUTERS FROM BRITISH TELECOM – The Society has received sponsorship from British Telecom in the welcome form of two of their surplus personal computers. These are both at present housed in the Botany Dept. at The Natural History Museum, London, and are available there for use by appointment by any member engaged in Society business. The membership database is now installed on one of them.

ANNUAL GENERAL MEETING 1990

MINUTES of the 87th ANNUAL GENERAL MEETING held at Chelsea Physic Garden, Royal Hospital Road, London on Saturday 3 March 1990 at 2.15 p.m.

IN THE CHAIR: The President, Dr Barry Thomas.

PRESENT: R G Ackers, P J Acock, G R S Baier, P G Barnes, J Bacroft, J H Bouckley, A R Busby, J M Camus, J A Crabbe, A J Dickman, J W Dyce, A J Ensoll, D Fortune, M Gibby, N J & E Hards, M Harris, R Hibbs, G K Hoare, D M Holly, J M Ide, A C Jermy, M Ladell, E O Mason, T R A Maxwell, A R Montford, A M Paul, Sir H Peto, A C Pigott, M H Rickard, P H Ripley, R J & B Smith, R N Timm, B & M Williams, J R Woodhams.

ITEM 1 - APOLOGIES FOR ABSENCE: G Tonge, T G Walker.

ITEM 2 - APPROVAL OF MINTUES: Minutes of the Annual General Meeting held on 4 March 1989 were read and approved.

ITEM 3 - MATTERS ARISING from those minutes: None.

ITEM 4 - HONORARY GENERAL SECRETARY'S REPORT: 1989 has been an extremely busy year for the Society now that the plans for our Centenary celebrations next year are gaining momentum. The Committee was very pleased with the result of the questionnaire circulated to members asking if anyone would be prepared to assist the Society in any way. Many members returned the questionnaire with a positive response and the Committee will get in touch with the volunteers in the near future.

MEETINGS during 1989 proved most successful, hopefully reflecting the members' response to an interesting programme of visits and no doubt helped in large measure by the prolonged good weather of last summer. The Meetings Sub-committee strives to present an interesting programme each year but their task would be made easier by members either suggesting areas for weekend meetings or, better still, volunteering to lead a meeting.

REGIONAL GROUPS continue to organise very successful visits on a local level and members in those areas served by such a group are urged to support them. Addresses of regional organisers are listed on the membership card and on the full meetings programme. It is extremely encouraging to hear of a new group being formed to serve members in the Hertford - Bedford area. We still require regional organisers for Ireland, Scotland, Wales and the north-west of England.

NCCPG CONFERENCE - I regret that I was unable to attend the National Council for the Conservation of Plants and Gardens Conference in Leeds during September 1989. However, Jack Bouckley kindly stepped into the breach and represented our Society and is to be congratulated on the brief talk he gave outlining our Society's activities in fern variety conservation and for the fine display of ferns he staged.

MEMBERSHIP - As reported in the *Bulletin*, the Society was pleased to enrol 69 new members during 1989 and we extend to them a warm welcome. We look forward to meeting them during the coming year and hope that they will make themselves known to leaders at meetings. The finest way to learn about ferns and fern growing is by engaging in friendly conversation with other members. Each year I try to provide fairly accurate figures of our membership but always with the qualification that it is difficult to be confident of figures at the beginning of the year and this report is no different. I am indebted to Alison Paul for informing us that we have 656 members.

JOURNALS - The *Bulletin* - Vol. 3, No. 6, 1989 completes Vol. 3 of the *Bulletin* and my last year as its editor. Alison Paul takes over for Vol. 4 and I would remind meetings leaders that they can greatly assist Alison by submitting meetings reports in good time thereby ensuring the early appearance of the *Bulletin*. The Editors of the *Fern Gazette* and the *Pteridologist* are always pleased to receive copy at any time and any hesitant would-be authors will receive every help and encouragement from them.

PLANT AND SPORE EXCHANGE SCHEMES - Rosemary Hibbs, organiser of the Plant Exchange Scheme, reports that offers were substantially down on 1988 with 22 different ferns offered by 7 members. Mrs Hibbs is concerned that many members are under the impression that they must have plants to exchange before they can take advantage of the scheme. Mrs Hibbs is pleased to supply any member with a list of the plants on offer.

Margaret Nimmo-Smith, organiser of the Spore Exchange Scheme reports that during 1989 request lists were received from 111 members which resulted in sending out 2080 packets of 496 items. The three most popular species were *Adiantum monochlamys, A. reniforme* and *Woodsia ilvensis*. The scheme relies on the membership for fresh supplies each year, especially of our native species. Common species such as broad buckler, male and lady ferns are often requested by our overseas members. Mrs Nimmo-Smith also reports a paucity of named lady fern varieties.

Mr Busby's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 - HONORARY TREASURER'S REPORT: Dr Nick Hards circulated his balance sheet to the meeting and explained that although the Society's finances at present remain sound, the need now arises for an adjustment to the subscriptions and this would be discussed further and a decision made under item 10 on the agenda.
Dr Hards' report and balance sheet were approved and adopted by the meeting and the President thanked Dr Hards.

The President then proposed that item 10 - 'Proposed Increase in Subscriptions' should be considered next. Dr Hards explained that it will be five years in January 1991 since the last increase in subscriptions and that although the Society had held off increasing subscriptions for as long as possible, we were now faced with the inevitable. Mr G Baier queried the payment of bank charges and Dr Hards replied that we need itemised listings from the bank detailing subscriptions received and for this service we must pay bank charges. The membership had been circulated with details of the following proposed subscription increases: Full Personal Members increased by £2.50 to £12.50, Members not receiving the Fern Gazette by £2.00 to £9.50 and Student members by £2.00 to £7.00. Family membership in any category will remain an additional £2. These represent an annual increment of about 5% which is in line with recent inflation.

The President proposed from the chair that the new subscription rates payable from 1 January 1991 be adopted. The motion was seconded and carried unanimously.

ITEM 6 - MEETINGS SECRETARY'S REPORT: Anthony Pigott briefly outlined the Meetings Programme for 1990 and drew members attention to a visit to Brittany in May/June. Mr Pigott also mentioned some of the ideas now being considered for the Centenary

Celebrations in 1991. Margaret Harris, acting as secretary to the Centenary Sub-committee reported briefly on its work and plans for 1991.
The Meetings Secretary's report was approved and adopted by the meeting and the President thanked Mr Pigott.

ITEM 7 - EDITORS' REPORTS: *'Fern Gazette'* - J A Crabbe was pleased to report that he had plenty of copy in hand for the next issue of the *Fern Gazette*. Mr Crabbe also reported that this year members subscribing to the *'Gazette'* can look forward to two copies per annum.
'Pteridologist' - Mr M Rickard was also pleased to report that copy for the 1990 *Pteridologist* was arriving steadily and that we should be able to look forward to receiving our copies in May. Mr Rickard also reminded the meeting that he felt that it was time for him to stand down if a suitable replacement could be found.
'Bulletin' - A R Busby reported that as the 1989 *Bulletin* completes Volume 3 of the *Bulletin*, he was retiring as Editor. Alison Paul has agreed to stand for election as editor of the *Bulletin*.

The President proposed that all the reports be approved and adopted and this was agreed by the meeting.

ITEM 8 - ELECTION OF OFFICERS AND COMMITTEE: The President introduced this item by expressing his thanks to the Officers and Committee members for all their hard work during the past year.

Election of Honorary General Secretary - The President was pleased to note that A R Busby was willing to serve for another year.
Election of Honorary Treasurer - The President was pleased to note that Dr N J Hards was willing to serve for another year.
Election of Meetings Secretary - The President was pleased to note that Mr A Pigott was willing to serve for another year.
All the Officers were elected unanimously.

Election of Committee - The Secretary reported that, as the longest serving member of the Committee, P H Ripley was due to retire. Alison Paul and Jennifer Ide are the next longest serving members on the Committee and Miss Paul had agreed to stand down. There is also a vacancy held over from last year, so there are three vacancies to be filled. Mr Busby reported that he had received three nominations for the Committee: Margaret Nimmo-Smith, proposed by A R Busby and seconded by A C Pigott. Peter Barnes, proposed by A C Jermy and seconded by J M Camus. Neil Timm, proposed by A M Paul and seconded by A C Jermy. All nominees were duly elected. The remaining seven members of the Committee were elected 'en bloc'.

Election of Honorary Editors - J A Crabbe, M H Rickard and A M Paul were elected to serve as editors of the 'Fern Gazette', 'Pteridologist' and 'Bulletin' respectively.

ITEM 9 - ELECTION OF AUDITORS: Jack Bouckley and Richard Lamb had notified the Secretary of their willingness to serve for another year and were duly elected with the thanks of the President.

ITEM 10 - ANY OTHER BUSINESS: As there was no further business, the President thanked the members for attending and closed the meeting at 3.05 pm.

A R Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1989

ORDINARY ACCOUNT

(1988)	**INCOME**:	
5725.83	SUBSCRIPTIONS	£6457.45
312.14	INTEREST	611.29
200.00	BOOKSALES PROFIT	100.00
10.00	DONATIONS	5.00
10.50	SPORE EXCHANGE	-
153.75	T SHIRT SALES	161.01
49.22	SUNDRIES	-
	TOTAL INCOME	£7334.75
	EXPENSES:	
1420.00	METLOC - PTERIDOLOGIST	1538.00
2053.00	METLOC - GAZETTE	1978.00
916.00	METLOC - BULLETIN	949.00
149.50	PRINTING AND STATIONERY	243.00
1190.81	ADMINISTRATION AND POSTAGE	1632.15
56.10	SUBSCRIPTIONS TO SOCIETIES	421.10
80.11	BANK CHARGES	87.28
37.75	SPORE EXCHANGE	50.00
84.54	MEETINGS	52.72
-	CENTENARY EXPENSES	50.00
-	T SHIRTS	182.85
	TOTAL EXPENSES	£7184.10
	BALANCE FOR 1989	150.65
	BROUGHT FORWARD FROM 1988	4197.62
	CARRIED FORWARD AT 31.12.1989	£4348.27

PUBLICATIONS ACCOUNT

	BALANCE BROUGHT FORWARD		2315.13
485.91	SALES - Journals and Offprints	326.88	
141.00	- Guide to Hardy Ferns	404.00	
254.00	- Hardy Ferns	308.00	
-	- Fern Names & Their Meanings	444.00	1482.88
	CARRIED FORWARD AT 31.12.1989		3798.01

GREENFIELD FUND

BALANCE BROUGHT FORWARD	£1904.67
GRANTS	(350.00)
INTEREST RECEIVED	148.41
CARRIED FORWARD AT 31.12.1989	£1703.08

CENTENARY FUND

BALANCE BROUGHT FORWARD	£590.00
DONATIONS RECEIVED	167.50
INTEREST RECEIVED	44.13
CARRIED FORWARD AT 31.12.1989	£801.63

Notes to Accounts

1. The Society held the following stocks of books at 31st December 1989 (1988 stocks in brackets):-
49 *Hardy Ferns* (82), 47 *Guide to Hardy Ferns* (170), 271 *Fern Names and Their Meanings* (500)

2. Interest arises on 30th April on the Greenfield and Centenary Funds. No provision has been made for accrued interest at 31st December.

3. For the convenience of the officers concerned and the Treasurer certain officers are given advances of expenses. The balances outstanding at 31 Dec. were small and have not been adjusted in the accounts.

4. Some 1989 Subscriptions were received after 31st December and conversely some Subscriptions for 1990 were received before 31st December. These accounts reflect amounts actually received but in future years the Treasurer will investigate the position and try to reflect the true position more accurately.

LECTURE MEETINGS AND DAY VISITS 1990

SPRING INDOOR MEETING - 3 March. During the morning members had the opportunity to explore Chelsea Physic Garden, see the 'British Ferns' video, exchange or buy ferns, purchase items from BPS Booksales and have their mystery ferns identified. A number of Banks' Florilegium prints were displayed for sale, and Josephine Camus, Alison Paul and Clive Jermy exhibited a poster of the British species of *Equisetum* and the hybrids between them which are already known or which could occur in Britain (as displayed at the BSBI Exhibition Meeting).

After the business of the AGM, Dr Mary Gibby spoke on the ferns of Madeira. She showed slides taken on a visit to Madeira with Alison Paul, when they collected pteridophytes and ecological and distributional data for The Natural History Museum's 'Flora of Madeira' project. Madeira is a mountainous volcanic island lying in the mid Atlantic Ocean between the Azores and the Canary Islands. Slides illustrated the topography of the island with its steep, terraced hillsides and the high rocky cliffs of the coastline.

The northern part of the island has a high rainfall which supports dense vegetation - laurel forests with trees encrusted with lichens, mosses and ferns. The island is irrigated by an extensive system of canals or levadas that carry water over many miles from the wet central mountains. These levadas all have paths alongside them to allow access for repairs, and as the slides showed, the paths provide a wonderful opportunity for botanists to gain access to the steep-sided valleys. Levadas vary considerably, from those with concrete sides, two feet wide and twice as deep, to those with mossy, fern bedecked edges. Some were cut into cliff-sides by the same technique as the construction of parts of the coastal road - hanging the engineers over the cliff-sides in baskets on ropes! In places the levadas pass right through the mountain from one side to another by means of tunnels, often long and with low roofs, but well worth negotiating to gain access to some wonderfully ferny areas.

Madeira has 63 native species of pteridophyte of which 12 are endemic. *Davallia canariensis* is commonly found on trees, cliffs and walls, usually in sunny places. Cheilanthoid ferns used to be common on walls and buildings, but different building practices and cleaning up old walls have reduced the number of available niches. A common epiphyte is *Polypodium macaronesicum; P. vulgare* grows only at high altitudes and *P. interjectum* is very rare on the island. Endemic ferns illustrated included the coriaceous *Polystichum falcinellum,* which hybridises with *P. setiferum* to give *P.* x *maderense.* Of the four *Dryopteris* species in Madeira, *D. affinis* subsp. *affinis, D. aemula* and the endemic *D. aitoniana* are widespread. *D. maderensis* (also endemic) is sometimes locally abundant.

Diplazium caudatum is a plant of damp, shady habitats, as is the bulbiferous *Woodwardia radicans,* which overhangs levadas and cascades down wet cliffs. Many other pteridophytes were shown - several species of *Asplenium, Cystopteris diaphana,* two species of *Huperzia, Hymenophyllum tunbrigense* and the rare endemic *H. maderense,* and *Culcita macrocarpa,* also a rarity, with its beautiful soft, gingery scales - to name but a few. It is interesting to note that some of our most familiar species, for example *Asplenium scolopendrium* and *Oreopteris limbosperma* are quite rare in Madeira, whereas our endangered *Trichomanes speciosum* is a common fern on boulders, logs and tree bases in damp habitats in Madeira.

M Gibby & A M Paul

After some welcome refreshments the President introduced Martin Rickard, who presented an illustrated talk entitled 'Ferns I Like', a personal view on garden-worthy ferns. Martin's interest in tree-ferns is no secret to most members, but the idea of growing them without the protection of a frost-free greenhouse in the border region of Shropshire/Herefordshire seems to most growers to be a risky one. British growers have always considered even the tolerant *Dicksonia antarctica* as being restricted to the Gulf Stream kissed parts of Britain such as south-west England and the west coasts of Ireland and Scotland.

Martin was unconvinced and reported with photographic evidence tree-ferns growing at high altitudes and in habitats that were obviously much colder than we usually consider suitable for these majestic plants. He considers that tree-ferns raised from progeny in such areas might well prove cold hardy. The tree-ferns Martin is growing do enjoy the protection of a wall of hay bales and a covering of bubble polythene during the winter months. Martin's slides of the tree-ferns in his garden show that his regime is very successful so far.

Another of Martin's interests is his National Collection of hardy *Polypodium* varieties. His collection now contains virtually all the extant forms, including many that are no longer widely grown. He then turned his attention to some of his recent finds, particularly *Asplenium trichomanes* subsp. *pachyrachis* and its variety 'Trogyense', a variety first found by E J Lowe and rediscovered by Martin near the same site.

Martin concluded his fascinating talk with slides of Professor T Reichstein's garden and some rarely seen ferns such as the evergreen *Asplenium dareoides* and *Dryopteris tokyoensis*. There followed a very brisk questions and answers session which gave Martin the opportunity to expand on many of the ferns shown.

The President thanked Martin and Mary for two interesting talks and also thanked those members who had helped to make the day such a success.

A R Busby

KEW GARDENS - 19 May. Thirty-four members gathered in the Lower Nursery at the Royal Botanic Gardens, Kew, for our annual early summer meeting.

The party was welcomed by John Woodhams who outlined the afternoon's programme. It was a particular pleasure to welcome Chris and Lorraine Goudey from Victoria, Australia. John began with a talk entitled 'Collecting Plants for Kew'. He outlined the problems modern plant collectors face in having to ensure that all the relevant documents such as CITES (Convention on International Trade in Endangered Species) export permits, import permits and phytosanitary certificates have been issued. Not until all the paperwork has been dealt with can anyone begin to collect any plants.

John explained that although in some cases spores can be collected and sent home for propagation, very often mature plant material is essential. Occasionally sporelings are collected but these are difficult to transport safely and you cannot be sure of what you are collecting. Mature plant material provides its own problems - the size or shape of a fern can make it difficult to pack securely. However, some species are fairly straightforward, e.g. *Drynaria* requires only a small amount of rhizome with a growing point. *Angiopteris* are huge ferns but by removing a stipule or two from the base of a frond, these can be encouraged to produce new plants. After all the soil has been washed from their roots the ferns need to be packed with great care if they are to arrive at their destination in good condition. John ended his very interesting talk with a brisk questions and answers session.

John then introduced Matthew Ford who has been working at Kew for three and a half years and is responsible for the micropropagation of ferns. Matthew explained that this is a method by which a tiny piece of meristematic tissue, usually the growing point, is removed from a plant, sterilised and placed on a nutrient agar under carefully controlled light and temperature regimes. Such material buds off new plants and stocks of plants otherwise difficult to grow can be quickly built up. Matthew went on to explain that although this technique has been used very successfully for many years on other groups of plants, notably orchids, problems do arise, particularly when the tiny plantlets have to be moved on to compost.

Throughout his talk, Matthew passed around test-tubes and flasks containing fern material propagated in this way. Later he showed us various plants in the nursery that had been grown on into pots. Matthew concluded his talk by answering questions raised about the problems he had outlined.

Our final speaker was Josephine Camus, a fern taxonomist from the Natural History Museum, who had kindly agreed to give us a talk on the problems of studying dead ferns in the herbarium. Difficulties arise simply due to the size and shape of many species, and she illustrated this point by referring to *Angiopteris,* a fern with huge fronds and a fleshy stipe. *Platycerium* is another genus that provides the taxonomist with particular problems in the herbarium. There are some features useful in classification that are lost when a plant is preserved as a herbarium specimen. Researchers are often faced with little envelopes of bits and pieces when consulting old material! Even the way fronds die and disintegrate may be useful. Apart from the obvious features used in the identification of ferns and their placement in the natural order of plants, such as frond shape and size, and the shape and position of the sori, some taxonomists need to see how the vascular tissue has developed. All this points to the need for the careful collection and storage of whole fertile fronds if it is to be of value to the researching taxonomists. At the end of her talk, Josephine answered a number of questions raised by members on various points she had made.

The President thanked the speakers for providing us with three very interesting talks and John Woodhams invited members to return to the mess-room for refreshments.

Afterwards, John led the members around the glasshouses in the lower nursery to see the reserve fern collection which houses much research material and explained many of the problems of cultivating such an exotic collection of ferns and fern allies.

A guided tour of the Kew Herbarium by Peter Edwards was last, but not least, on the day's agenda. He also outlined the processes involved in incorporating new specimens in the collections. Thomas Moore's herbarium is housed separately, and Peter showed us a few of the many fern varieties it contains.

Many thanks to John Woodhams for organising such an interesting meeting and to Peter Edwards for the splendid refreshments.

A R Busby

AUTUMN INDOOR MEETING – 13 October. This indoor meeting departed from usual themes in concentrating on pteridophytes of the past, rather than those of the present. Four speakers gave insights into fossil pteridophytes.

Dianne Edwards (University of Wales, Cardiff College) outlined the anatomical and physiological characters necessary for the earliest land plants to survive out of water some 400 million years ago. In so doing, she showed slides of the oldest known stomata and vascular tissues and explained how they were preserved during fossilisation. She outlined the pteridophytic characters of these small, simple, dichotomising plants with terminal sporangia and then went on to show how they evolved into more complex ones that were in turn to give rise to the earliest ferns, clubmosses and horsetails.

Barry Thomas (National Museum of Wales) jumped 100 million years to talk about the giant pteridophytes that dominated the Coal Measures swamps and produced the coal on which we rely so much. Tropical conditions allowed optimal growth of giant clubmosses, horsetails and marattialean tree-ferns and the speaker summarised what we know about their form, reproduction and ecology. He concluded by outlining how the drying out of the swamps, at the end of the Carboniferous period, led to the extinction of these giant forms leaving only the smaller and presumably more adaptable pteridophytes to persist and evolve.

Margaret Collinson (King's College, London) jumped nearly another 200 million years to begin her talk on the evolutionary history of living ferns. She showed some slides of beautifully preserved fossils including *Botrychium, Onoclea,* sporangia of *Acrostichum,* some water ferns, selaginellas, and portions of schizaeaceous and dennstaedtioid ferns. She demonstrated that we know a great deal about the fossil record of many families of ferns, but unfortunately our knowledge of the polypodiaceous ferns is very scanty. This is most probably due to the fact that most species lived away from areas suitable for preservation and had persistent leaves that wilted and decayed on the plants.

James Merryweather (University of York) then gave an entertaining talk about his amateur fossil collecting activities on the Yorkshire coast. In so doing, he showed slides of localities he has visited over the years and slides and specimens of fossils collected from these Jurassic rocks that are about 170 million years in age. These included species belonging to the Osmundaceae and Dicksoniaceae and examples of *Equisetum*-like plants that had been fossilised in their original positions of growth.

The day was rounded off by Margaret Harris talking about her late father, Professor Tom Harris FRS of Reading University, who is accepted as having been an authority on the Yorkshire Jurassic flora. As one of his last students I found it particularly fascinating to hear her reminisce about aspects of his family life that matched up so well with those of his better known University and scientific life.

It is difficult to assess the impact of a meeting that I both chaired and spoke in, but the lively questioning that followed all the speakers indicated that the meeting was successful and that the 33 members present certainly had an interest in the evolutionary history of ferns and their allies.

B A Thomas

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NATIONAL FIELD MEETINGS 1990

BRITTANY - 26 May - 2 June

P H Ripley

Thirteen members and friends left Newhaven on Saturday, May 26th, travelling by ferry and highly-tuned luxury(!) minibus, to spend Saturday night near the ruined abbey at Hambye, Normandy. They were joined at Hambye by Dr & Mrs Houitte, recently joined French members who live near Granville. We enjoyed their company very much and also their knowledge of the geography and folk-lore of Brittany. On Sunday we were joined by seven other members, a total 22 participating in the first overseas meeting of the BPS for some time. We were fortunate also to have the expertise of Clive Jermy, and his colleague from Belgium, Ronnie Viane.

Sun. 27 May - The Auberge de l'Abbaye at Hambye served us well. Not only was the food excellent, but five species of ferns grew in the hotel walls. *Dryopteris filix-mas* was seen in an atypical habitat as a table decoration the previous evening!

There was time for some brief fern-hunting in a wood near St. Samson, overlooking the valley of the Rance, just below Dinan. Anthony Pigott joined us here and we benefited from his knowledge of the *Dryopteris affinis* complex. *D. affinis* subsp. *borreri* and subsp. *affinis* were both seen, together with *D. dilatata, D. filix-mas, Athyrium filix-femina, Polystichum setiferum* and *Polypodium interjectum.*

We arrived at Châteaulin, Finistère, in the evening, but not before a drive over the Monts d'Arrée had showed us tantalising glimpses of *Osmunda regalis* in the roadside ditches.

Mon. 28 May - A day on the North coast of the Audierne peninsular was preceded by a sightseeing stop at the preserved medieval centre of the town of Locronan. Actually our stop was fully justified by finding eight fern species growing in the granite walls in the town: *Asplenium billotii, A. adiantum-nigrum, A. trichomanes, A. ruta-muraria, A. scolopendrium, Polypodium interjectum, Pteridium aquilinum* and *Dryopteris filix-mas. Athyrium filix-femina* completed the tally. *Asplenium ceterach* is strangely scarce in this part of France.

A series of rocky promontories jut into the sea along this coast. The first to be visited - Pointe de Beuzec - contained impressive stands of *Osmunda regalis, Pteridium* of course, and *Asplenium marinum* and *A. billotii* in the cliff rock crevices. The gametophyte of *Trichomanes speciosum* was found in a cave just above the sea by Clive and Ronnie.

Lunch was taken in a small sandy cove, Pors Piron, where *Osmunda regalis* and *Equisetum arvense* were growing in ditches or by the road, and where an irregularly crested *Asplenium scolopendrium* was seen against the walls of a shack. Some of the party braved the water and some I regret preferred the attractions of the beach to fern hunting in the afternoon!

Further west, after lunch, our next stop was the Pointe de Brézellec. The fine specimen of *Asplenium obovatum* described by Rémy Prelli and seen by myself in April had unfortunately disappeared to make way for a car park, but other specimens were seen, together with *A. billotii* and *A. marinum. Osmunda regalis* was again seen, and some atypical *Dryopteris filix-mas* growing on the cliffs. We then visited Pointe de Van, almost the most westerly point on this peninsular. Clive again found *Asplenium obovatum* on the cliffs towards the end of the Pointe.

Tues. 29 May - Huelgoat is a small town, some 20 miles north-east of Châteaulin. At one time a mining centre (iron?), it now attracts tourists to the famous 'chaos' of rocks. Huge granite boulders have fallen on top of the river valley, forming bizarre shapes and grottos, and frequently completely obscuring the river beneath. *Hymenophyllum tunbrigense* was found commonly on the more shaded rocks, in places in great sheets, but always in a very dry condition; much more so than even at this time in 1989. Clive again found *Trichomanes speciosum* gametophytes in a 'cave' under a boulder. Following the river valley *Osmunda* was again seen, together with *Blechnum spicant, Polypodium interjectum, Athyrium filix-femina, Dryopteris filix-mas, D. dilatata* and *D. affinis* subsp. *affinis* and subsp. *borreri*. The same species were seen in or near the 'Grotte d'Arthur' (sheets of *Hymenophyllum),* and 'Le Gouffre' - a cataract again covered by a 'chaos' of rocks. Almost certainly *Hymenophyllum wilsonii* was not here. A previously visited site at Le Toul Goulic, to the east, was not seen on this visit as the dry conditions would have made exploration unattractive.

In Huelgoat itself, a range of *Asplenium* species were seen on walls *(A. billotii, A. adiantum-nigrum, A. scolopendrium* and *A. ceterach* (very stunted). On the walls of the canal originally dug to provide an even supply of water to the mine, magnificent specimens of *A. trichomanes* were seen.

In the afternoon a detour was made to a hamlet - Le Cleuziou - where Rémy Prelli had found *Trichomanes speciosum*. Imagine our delight on removing the nails and sliding back the lid, to find the walls of a small well literally covered with luxuriant growth! Much time was spent in photography and general adulation, much to the alarm of the bemused natives. We returned via Quimperlé and the 'Roches du Diable', a steep wooded rocky gorge. This was not explored in any detail. *Polypodium interjectum* was dominant on the upper slopes and *Asplenium billotii* was found beneath the rocks; the lower slopes looked to be worthy of further work in spite of considerable gale damage.

Wed. 30 May - The journey to the second venue, Erquy, was made via a number of short stops. The opportunity was taken to see the remarkable and typically Breton carved calvary and old church at Pleyben, near Châteaulin. Some time was then spent searching on the shores of the reservoir St. Michel, high in the heart of the Monts d'Arrée, for *Lycopodium inundatum,* seen previously by Rémy in a moist boggy area to the north-east of the reservoir. It was not found; possibly two dry years had allowed too much competition.

Anthony Pigott found *Oreopteris limbosperma* as well as *Osmunda* in the ditches by the roadsides near Botmeur and Roc Trévézel, but the main party had no time to stop. Lunch was taken near St-Pol-de-Léon, but not before *Anogramma leptophylla* was seen growing abundantly on unshaded roadside banks just outside the town.

The rocky cliffs flanking the estuary up to Morlaix looked interesting but again time did not permit a search before the final journey to Erquy was completed. Those who explored more sites along the north coast en route, additionally found abundant *Equisetum telmateia* along the top of the beach near Locquirec.

Thurs. 31 May - We were most fortunate to have the company of Rémy Prelli for a day spent in the vicinity of Erquy and Lamballe. Rémy first took us along the coast towards Cap Fréhel to a dune habitat where *Equisetum ramosissimum* was growing in superabundance a few feet from the beautifully sandy beach, and some four or five feet above the spot where a small stream pooled before draining through the sand to the sea. The polymorphism described by Rémy in his book was well seen, both the tall thicker spikes and the numerous smaller thin spikes being traced to a common rhizome. *E. palustre* was seen nearby, also *E. telmateia*. This area was also notable for some fine and uncommon orchids.

Around Cap Fréhel, geographically very similar to the capes of the Audierne peninsular, *Asplenium adiantum-nigrum, A. marinum,* and *A. billotii* were again found, as well as large clumps of *Osmunda*.

After lunch we first visited a wood near Port-à-la-Duc. *Dryopteris affinis* subsp. *affinis* and subsp. *borreri* were both seen here, enabling good comparisons to be made. *D. filix-mas, D. dilatata, Polypodium interjectum, Polystichum setiferum, Asplenium adiantum-nigrum, A. scolopendrium* and *Athyrium filix-femina* were also present in this interesting habitat. *Equisetum arvense* and *E. palustre* were common and *Polypodium vulgare* grew at the base of trees.

Along the estuary cliffs near the Port itself, *Polypodium cambricum* was seen in abundance, although it was very dry. A little further on, in a wood where *Polystichum setiferum* and *Asplenium scolopendrium* were the predominant ferns, two large (though smaller than in 1989) specimens of *Asplenium adiantum-nigrum*-like ferns were examined. One of these had been studied extensively by Rémy. Chromosome counting (triploid) and the production of abortive spores confirmed one plant as *A.* x *ticinense,* while the other, morphologically indistinguishable, was the tetraploid *A. adiantum-nigrum.*

Towards Lamballe, we stopped to explore a wood where *Equisetum hyemale* was present, again in abundance but particularly where tractor ruts and natural water had left damp clearings in the wood. *Dryopteris dilatata* was also present at this site, as was *D. carthusiana,* the first time we had seen this on our visit thus far. Finally we stopped at a heathy area, once dug for clay to supply nearby potteries (Le Poterie). Near the road *Equisetum* x *litorale* and *E.* x *dycei* were growing in a pond/bog, while *E. palustre* and *E. arvense* were nearby. Further from the road, and near a pond recently dug for sporting purposes, *Pilularia globulifera* was found, although in nothing like the abundance seen, before drainage, in 1989.

We were pleased to be able to entertain Rémy and his family at the hotel for a meal in the evening.

Fri. 1 June - Our last day was spent visiting Lac Guerlédan, south-west of Lamballe. Mention should be made of a stop for coffee at St. Gilles le Vieux Marche, an archetypal French village, where colourful window-boxes sprouted from every building. The Gorges du Daoulas were a little disappointing. Apart from some fine *Osmundas,* and abundant, though dry, *Polypodium interjectum* on the rocks, only *Dryopteris filix-mas, D. dilatata* and *Athyrium filix-femina* were found in addition of course to the ubiquitous bracken.

Our lunch stop, however, more than made up for any disappointment. Just where the Lac Guerlédan begins to broaden, a stream was followed. It led us to a beautiful site where *Osmunda regalis* graced the stream banks, and where some of the finest *Dryopteris aemula* plants I have seen were flourishing, together with *D. dilatata, D. carthusiana, D. affinis* complex (coward!), *D. filix-mas, Blechnum spicant, Polypodium interjectum* and *Athyrium filix-femina.* Amost certainly the hybrid *D.* x *deweveri* was also present.

Before leaving Erquy, mention should be made of the walls in the town, where *Asplenium ceterach* was found, as well as *A. adiantum-nigrum, A. ruta-muraria, A. trichomanes,* *A. scolopendrium*, and *Polypodium*. Mention should also be made of the meals we enjoyed at the hotels where we stayed. The Beauséjour excelled itself with a meal this evening which included a minimally dressed Spider Crab. While not to everyone's taste, several attempts on the world record for the maximum amount of extractable meat were made.

We left for Dieppe on Saturday, June 2nd, leaving various members at different points en route. We were particularly sorry to leave the Houittes and hope very much we shall see them again at a meeting in Britain, hopefully at least during the centenary year.

I should like to pay particular tribute to the incredible knowledge of Rémy Prelli, and for his enormous help and advice in planning and directing our itinerary. I should also like to say a big 'thank you' to Pat Acock for his help with the hire of the minibus, and with so many aspects of the organisation, and finally to the members and friends who contributed expertise and bonhomie to make the week enjoyable, and I hope successful. Certainly my appetite has been whetted for future trips to geographically broaden our pteridological horizons.

[All those of us who attended this very enjoyable meeting would like to express our great gratitude to Paul for leading this meeting and for all the hard work and time he put in beforehand to ensure it would be such a successful trip. Thank-you Paul!]

Rémy Prelli, Dr Houitte & Paul Ripley examine *Equisetum ramosissimum* on sand-dunes NE of Erquy, Brittany

Photo: M Ladell

ISLE OF WIGHT - 21-22 July

Patrick Acock

We were very fortunate to have Bill Shepherd, the BSBI recorder and co-author of the IOW Flora, to lead about a dozen members on this weekend. Bill knows the island's flora exceptionally well and his enthusiasm for all aspects of the island's history and plants really made the weekend. Bill brought with him a young student, Nick, whose knowledge of the Flora put most of us to shame. Bill claimed the island has 23 ferns and we were to see all of them over the weekend. Although we managed carelessly to 'lose' one for him, we made up for it at the eleventh hour.

The first day was spent predominantly in the west. Mount Joy Cemetery near Carisbrooke Castle was the home of innumerable meadow flowers and butterflies and the walls host to *Asplenium trichomanes, A. ruta-muraria, A. adiantum-nigrum* and *A. scolopendrium.* An ancient lane just beyond the now deserted Priory yielded the more common ferns of the island: *Polystichum setiferum, Polypodium interjectum, Dryopteris filix-mas, D. dilatata* and *Pteridium aquilinum.* Parkstone Forest was surprisingly empty of ferns except the ubiquitous bracken. Two sites were viewed. The one in the south had *Athyrium filix-femina* and *Blechnum spicant* and in the north we added *Dryopteris affinis* subsp. *affinis,* including another of the foliose ones we are constantly finding on southern meetings.

After dinner, a visit to Porchfield Shooting Range revealed *Ophioglossum vulgatum* drying out and dying back. This was followed by a visit to the willow carr at Freshwater where we carelessly 'mislaid' *Dryopteris carthusiana.* A more extensive search may well reveal it but the bog was certainly more overgrown than Bill could ever remember. Horsetails were in profusion, with *Equisetum palustre, E. arvense* and *E. fluviatile* common. One of the latter showed an array of small cones on the extensive topmost lateral branches, surrounding a large central cone. In the shaded damper portion of the bog *Thelypteris palustris* abounded. Northwards on the River Yar the more common IOW ferns flourished.

Moving eastwards on Sunday, with a cooler breeze, a brief stop in Ryde revealed a wall with *Adiantum capillus-veneris* with attendant spleenworts. Here we said goodbye to the cycling Ripleys and made our way to Brading. Behind the railway on yet another River Yar we found the aforementioned horsetails and *Equisetum telmateia* but we could not find any trace of *Azolla filiculoides,* so plentiful the previous year. A railway bridge revealed a fine collection of our common spleenworts with a wall of the church sporting many plants of *Asplenium ceterach* albeit curled from the drought.

A visit to Apsey Copse revealed another ferny corner with a fine colony of the graceful *Equisetum sylvaticum.* After dinner overlooking the *Quercus ilex* wood at Ventnor we went to the southernmost tip of the island to look at a very ancient record of *Asplenium marinum* confined to a solitary rock amongst many similar ones. We went on to Beacon Alley and a waste site near Bagwich where we added some fine *Osmunda regalis* to our records, including some sporelings.

By now it was late in the afternoon and we were thinking that the BPS had contributed very little to the weekend, when Bill asked if we would look at one more site. Anxious to discover something we stopped off at a small road with a damp ditch and found two clumps of *Oreopteris limbosperma.* Only two previous recordings had been made and these had been thought dubious and could not be confirmed. Bill was delighted, his only regret that he had missed them on numerous previous visits and it had been his birthday the previous day. Bill's generous giving up of a whole weekend and his patience with the crew were greatly appreciated.

Postcript. On Monday three of us took the opportunity to visit the *Equisetum* x *bowmanii* site in the New Forest and found four areas where it was growing. An extensive search of Lordswood in Southampton failed to find *Equisetum hyemale* but a fine stand of *Equisetum sylvaticum* was found.

NORTH-EAST SCOTLAND (Grampian Region) - 5-11 August

C E Munyard

This meeting was planned to incorporate many of the areas visited by George Dickie, or his contemporaries, in the first half of the 19th century. The localities were recorded and described by Dickie in his *Botanists Guide* of 1860. It was anticipated that many of these records would be confirmed by our group 130 years on.

Profeits Hotel, in the village of Dinnet, Royal Deeside, was chosen as a suitable base and the hotel supplied B, B & B (Bed, Breakfast & Beer) for many of our group. Six of our members were accommodated at the hotel, six in two other guest houses in the village and the Acocks and Clive Jermy in a self catering cottage just outside Ballater. This latter circumstance provided the group with a handy tea and coffee stop on a couple of occasions. We didn't see the Ballater party as often as we would have liked in the evenings, but as anyone who has shared a meeting with Clive will know, he generally has 'pressing' things to do in the evenings.

Our group numbers varied between 15 and 18. All interested parties had been sent an outline of the sites to be visited, and the response from some of the part weekers indicating site preferences better enabled me to plan the week's programme. The proposed itinerary was presented to those present at dinner on Saturday evening. It was approved and it was also decided to visit 'The Colonel's Bed', Glen Ey, on Sunday. This site, not previously visited, was suggested by Dr Una Urquhart of the Aberdeen NCC office who was to join the group on Tuesday and Thursday, and so the field work started on -

Sun. 5 August - Glen Ey, 37/0888 - 37/0886. Sunday turned out to be a day of showers and after taking the wrong track we got back on course by climbing over a shoulder in the hills and eventually descending to the Ey Burn which runs through a narrow and deep gorge, well wooded with mixed trees including birch, larch, scots fir and rowan. The whole situation created a micro-climate ideal for our purpose and we were subsequently able to see many of the species we had not expected to see until later in the week. Our score here was 17 as follows: *Lycopodium clavatum, Huperzia selago, Selaginella selaginoides, Equisetum arvense, E. sylvaticum, Polypodium vulgare, Phegopteris connectilis, Oreopteris limbosperma, Asplenium viride, Athyrium filix-femina, Gymnocarpium dryopteris, Cystopteris fragilis, Polystichum lonchitis, P. aculeatum, Dryopteris filix-mas, D. dilatata* and *Blechnum spicant*. Such an unexpected start had somewhat stolen our thunder for what we had considered excellent localities due to be visited later in the week. There was much jocular talk among those present of a quick visit to the type locality of *Cystopteris dickieana* and then 'we can all go home'. Thankfully this did not happen since, as it turned out, an interesting and very congenial week lay ahead. On the return journey we stopped at -

The Pass of Ballater, 37/3697 - 37/3797. With reference to *Asplenium septentrionale*, Dickie records thus on page 230 'Rocks at the west end of the north side of the pass of Ballater. This interesting addition to our list was made in 1855 by Dr. Patterson RN from whom I received living plants'. Steve and a friend saw the plant here in 1968 before he became a member of the BPS. Our aim was to confirm this sighting, so the

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November 1990

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Please remember to notify the Assistant Secretary (Membership) of any changes of address.

Amendments to this list will be published in future issues of the Bulletin.

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party split into two groups one on the north face and one on the south. On the north side, presumably the site described by Dickie, the rocks have been used over the years by rock climbers, so that now much of the rock is polished by the many boots and all hand holds raked clean, so I fear there is little chance that the tiny forked spleenwort has survived on this site.

An interesting incident later in the week took place in the local post office/shop: a lady who espied my BPS Tee shirt asked if I was going to see the little fern that looks like grass at the Pass of Ballater. Yes, she had been with a local botanist and confirmed it. 'When?' I asked – 'about 20 years ago' she said!!

Mon. 6 August – Loch Muick, 37/3084 – 37/2781. Monday gave us a showery morning which progressed to an overcast afternoon with sunny periods. After admiring a large herd of red deer with some most impressive antlers in evidence, the group set off to walk around the loch and I was beginning to think I was in error to have suggested this site as the ferns were few and far between. The day did however yield up 16 for the checklist: *Lycopodium clavatum, Huperzia selago, Equisetum sylvaticum, Phegopteris connectilis, Oreopteris limbosperma, Athyrium filix-femina, Gymnocarpium dryopteris, Polystichum aculeatum, Dryopteris affinis* subsp. *borreri, D. dilatata* and *Blechnum spicant.*

We had stopped for lunch at the far (west) end of the loch and it was decided that the more adventurous members including one lady, Ann Daly, would ascend to the summit of Lochnagar at an altitude of just over 3,000ft, by way of the Glassalt Burn which enters the loch at the Royal Hunting Lodge (we were on the Balmoral Estate); this entailed a 2,000ft climb above the loch. The other ladies, children, myself and Ian Nimmo-Smith showed exceptional discretion and continued our circumnavigation of the loch and back to the cars, to meet up with most of the mountaineers later at Profeits. The additional finds by the 'Upper Class' were: *Lycopodium annotinum, Diphasiastrum alpinum, Athyrium distentifolium, Dryopteris expansa* and *Pteridium aquilinum.*

The latter was also seen on the return from the loch by the 'ramblers' group. Steve unfortunately sustained a minor injury to foot and knee whilst in the high country and we hoped it would not adversely affect his performance for the rest of the week. Unfortunately Tuesday's trip was long and arduous and took its toll, leaving him in considerable discomfort and he subsequently had to curtail his activity for the rest of the week. The hard day to which I refer was –

Tues. 7 August – Glen Callater, Loch Callater & Loch Kander, 37/1588 – 37/1980. It was a mainly sunny and warm morning but became overcast in the afternoon, a slight offering of rain never really got going so weather-wise no complaint. We were joined on this trip by Una Urquhart as this area includes an SSSI which she monitors and she was pleased to have the opportunity to brush up and extend her fern knowledge.

Not having visited the Glen before, I made enquiries from hill walking colleagues; they considered it a Sunday afternoon walk. WRONG! Don't ever ask hill walkers, they must have different standards to us mere mortals. It was a long, long walk to Loch Callater then a long, hard walk to Loch Kander. Dickie records among other things *Cystopteris montana* at the head of the glen. I regret we were unable to confirm this record, but there were large areas we were unable to cover; we did however record 17 on the checklist, pushing our overall total to 28. Recorded here were: *Huperzia selago, Diphasiastrum alpinum, Selaginella selaginoides, Equisetum fluviatile, E. sylvaticum, Botrychium lunaria, Cryptogramma crispa, Polypodium vulgare, Phegopteris connectilis,* *Asplenium viride, Athyrium distentifolium, Gymnocarpium dryopteris, Cystopteris fragilis, Polystichum lonchitis, Dryopteris oreades, D. expansa* and *Blechnum spicant.*

It was a very tired group that staggered into Profeits that evening to eat and rest up for -

Wed. 8 August - 38/662245. This was to be Peter Hainsworth's last of three days with the party and this locality being some small way on his journey home to Loch Carron was chosen for this particular day. Peter had set off before the main group, which made an unscheduled stop to look at a disused railway cutting at Tillyfourie 38/643125. This proved to be a superb *Dryopteris* site and Anthony Pigott, who with Margo Ladell arrived at Dinnet late on Tuesday, was able to instruct us on this interesting but confusing group. Anthony identified *Dryopteris affinis* subsp. *borreri,* subsp. *cambrensis,* var. *robusta,* and *D. carthusiana.* With a frond from each for comparison, the differences were a little easier to distinguish, although in my case no easier to remember. We did however remember Peter awaiting our arrival at Bennachie, so Steve went on to let him know the reason for our delay, and to let him know we would lunch at Inverurie first as it was now nearing noon. Peter had left a note on his car to say he had decided to go on ahead.

Having arrived at Inverurie the group passed the local library and in the window was a copy of *Hardy Ferns*; Reg Kaye was with us in print at least. At the other side of the Town Hall on a wall were *Asplenium ruta-muraria* and *A. trichomanes* subsp. *quadrivalens,* adding to a total of 20 for the day. New to our list was the last mentioned plus *Dryopteris affinis* var. *robusta, D. carthusiana* and *Asplenium adiantum-nigrum* (see below). After this trip to Watch Craig and Oxen Craig in the Bennachie group we decided to return to Dinnet via Silverford, a derelict farm on the Cabrach Road 38/431250. Beyond the ruin is a Serpentine outcrop upon which is a colony of *Asplenium adiantum-nigrum.* This form had formerly been classified as *A. cuneifolium,* the Serpentine spleenwort. The midges at this site were delighted we had come for dinner, so we beat a hasty retreat to Dinnet and our own meal, and to anticipate the long awaited visit to the next locality on -

Thurs. 9 August - Sea Caves and The Dee at Potarch. It was planned to leave the hotel a little earlier than usual as we were to be influenced by the tides and on the day, low tide would be at 9.53 am. We arrived at the locality at approximately 10.15 am and were met by Una once more. We made our way across the tidal area and the party spent a good half hour at the type locality of *Cystopteris dickieana.* Clive was pleased to see the colony looking so good, far better than on his last visit to the site and he mentioned that the last visit by the BPS was in 1962? Other species present were *Asplenium marinum, Athyrium filix-femina* and *Cystopteris fragilis.*

The nearby 'Waterfall site', as well as *C. dickieana* had *Asplenium scolopendrium,* not at all common in this area, *C. fragilis, A. filix-femina* and *D. dilatata.* For lunch we repaired to a local hostelry, after which some returned to the coast for more cave exploring whilst I took the rest to the 'Winter Gardens', Duthie Park and also the Cruickshank Botanic Garden at Old Aberdeen, where we saw several ferns, mostly imports. There was however, a small group of *Osmunda regalis* at Cruickshank.

Our friends at the coast added *Asplenium adiantum-nigrum* to the list. We had arranged for the two groups to meet up again at 4.30 pm at Potarch Bridge by Aboyne 37/605973 which meeting in fact actually took place nearer 5.30 pm. This was a site for *Equisetum pratense* which was located, as were two others, *E. fluviatile* and *E. arvense.*

On the parapet of the bridge was *Asplenium ruta-muraria*. Total for the day 11, running total now 40.

Fri. 10 August - Glen Quoich, 37/1191 - 37/0894. Linn of Dee, a popular tourist attraction, produced *Gymnocarpium dryopteris* and a few plants of *Dryopteris filix-mas* with a degree of cresting, also *Equisetum sylvaticum* near which were many plants of twayblade. We left some cars at the car park and all went on to Linn of Quoich a few miles along the road, 37/119911. Early on our walk was a Dickie site for *Polystichum lonchitis*, exactly as described in the *Botanists Guide*. Could he have examined this very plant, or was that a forerunner of this one? The plant is conveniently just 10 minutes from the car park and continuing up the river valley we found another 12 species and enjoyed some scenery which would be hard to beat. This glen is one of the few areas where the Caledonian forest still has a remnant. The age of the trees and the general appearance of the area produced an atmosphere which couldn't have changed for a hundred years or more, one felt.

Well up the glen - after a lunch break - I missed the path and after retracing our steps for a few hundred yards we picked up this path to take us through Clais Fhearnaig 37/0793 - 37/0592 with its apparently man made loch and on to Glen Louie which took us near the first Linn of Dee car park. Steve was waiting to take the drivers to pick up the cars from Linn of Quoich. The day produced a total of 15, but nothing new. The Nimmo-Smiths said goodbye here and started their journey toward home; several of the others who were not with the group on day one decided to stop off at Glen Ey and see the much discussed 'Colonel's Bed' locality.

Then as this was our last evening, the remaining members all met at Profeits for our final dinner together, a pleasant meal at which various sentiments were expressed. After dinner the group watched a video of a short visit to Peter's garden at Auchnashellach which had been broadcast on the local BBC garden programme a week earlier.

Sat. 11 August - Burn o' Vat, Dinnet Moor, 37/429997. Dinnet Moor is a nature reserve cared for by the Nature Conservancy Council. I had previously had telephone contact with Jim Parkin, the warden, and he met us at the visitors' centre at about 10 am. He expressed the hope that we would find time to visit a fairly new reserve at Dinnet which consists of an oak wood. Rob Cook of the NCC, Neil Timm, Anthony and Margo arranged to meet Jim in the afternoon to give him a list of species found in the wood.

We set out through the Vat, a geological feature in the form of an open topped cavern once part of a prehistoric waterfall system, and continued up the burn where many varieties awaited our discovery. The only new one was *Polypodium vulgare* which brought our total to 14 and the overall total for the week to 41. We returned for the last time to Profeits for lunch after which the meeting was over for 1990.

Last PM. The last four remaining members met with Jim Parkin as previously arranged to survey the oak wood opposite the Bridge of Dee at Dinnet, 37/462976. This area had recently been cleared of conifers in the interest of preserving the oak wood system. Jim conducted a tour of the wood and explained its history and plans for the future. The following plants were identified within the area: *Equisetum sylvaticum, Gymnocarpium dryopteris, Dryopteris filix-mas, D. carthusiana, D. affinis* subsp. *borreri* and subsp. *cambrensis, D. dilatata, Phegopteris connectilis, Blechnum spicant, Polypodium interjectum, Oreopteris limbosperma* and *Athyrium filix-femina*. Anthony also found a plant which may prove to be *D. affinis* var. *paleaceolobata*, but he was unable to give a final answer on the day. The warden thanked the group, and indicated that the findings would be recorded in the NCC records, and I thank Neil for this account of the afternoon.

During the week we had walked many a hill mile, had many a laugh and learned a little more of our subject. We had enjoyed possibly the best scenery that Royal Deeside had to offer, the weather was, on the whole, reasonably kind to us and we had made good and new friends within the ferning fraternity. For Steve and I, I would like to say that the comradeship and obvious pleasure of the group more than repaid us for any efforts we may have put into organising the meeting and I must sincerely say in the scots of my adopted country: 'WILL YE NO COME BACK AGAIN'.

EASTERN GLAMORGAN - 14-16 September G Hutchinson & B A Thomas

The meeting was based at the Imperial Hotel, Newport Road, Cardiff where most visitors from far afield stayed, arriving on Friday evening. A party of 15 set off from here on Saturday morning with a view to visiting selected sites in the Vale of Glamorgan. However, getting to the first two sites was delayed by traffic jams mostly caused by the St. Athan 44th annual air show combining the Battle of Britain 50th Anniversary (Red Arrows and Red Devils).

After an unintentional tour through the village of Welsh St. Donats the party arrived in one piece at Hensol Forest (31/0476). The pathway through the deciduous woodland to the lake of Pysgodlyn Mawr was carpeted with *Pteridium aquilinum* and *Molinia caerulea*. We headed westwards along the northern shore of the lake to reach the zones of vegetation at the far end of the lake containing encroaching stands of *Equisetum fluviatile*. On the way the acidic nature of the woodland floor was indicated by *Athyrium filix-femina* and the dimorphic *Blechnum spicant*.

Here our first *Dryopteris affinis* was detected, its shuttlecock/chanterelle-shaped indusia and parallelogram-shaped pinnules indicating subsp. *borreri*. The branching and hollow transverse sections of *Equisetum fluviatile* were also examined. Most of the party were able to squelch through the strong colony of *Potentilla palustris* to reach the main zone of *E. fluviatile* with a stand of *Carex rostrata* nearby. We were able to gaze across at the east end of the lake where *Pilularia globulifera* was known for many years. Sadly it was last recorded in 1971 after which it was exterminated by dredging during the construction of a small dam.

St. Donats (21/9468) was the next port of call with traffic delays relieved by views of aerobatics over St. Athan. Unusually for a BPS field meeting protective headgear was issued to all present on arrival. The Glamorgan Heritage coastal path was followed for a short distance after murky views of North Somerset landmarks were perceived across the Bristol Channel. The headgear was donned to examine the ledges along the base of the high flat-bedded liassic limestone cliffs. Here, that delicacy of granny's front room *Adiantum capillus-veneris* was seen growing in its native habitat. Associated species included *Festuca rubra* (glaucous-leaved), *Carex distans, Samolus valerandi, Crithmum maritimum* and *Hypochoeris radicata*. The party bifurcated for lunch to hostelries in Wick where the sun finally emerged.

A wide detour via the A48 was taken in the afternoon to avoid the air display. On the way to Dinas Powis *Equisetum telmateia* was seen as large spreading stands, now yellowing, along the large cuttings of the dual carriageway south east of Culverhouse Cross on the western edge of Cardiff (31/1475). Arrival at Dinas Powis (31/1571) was greeted by a fly past of the Red Arrows returning to base after zig-zagging from London to St. Athan on a grand tour. The sheltered avenue of Cwm George was bedecked with *Asplenium scolopendrium, Polystichum setiferum* and *Polypodium interjectum.*

The aim was to visit the classic site of *Polypodium cambricum* var. *cambricum* discovered there by Richard Kayse of Bristol 322 years ago. The lower slopes up to the carboniferous limestone cliff had *P. cambricum* freshly opened. The sori of *Polypodium* over the whole weekend were immature (green) showing the later autumn and winter to be the best times for serious work, in South Wales at least. A general view of the cliff face was perceived as the woods opened out. The very steep climb to the base of the cliff was rewarded with further *P. cambricum,* most fronds having curled up at the more exposed sites and looking rather drought stricken. Two parties were taken across the base of the cliff to view the var. *cambricum* through binoculars with much neck straining.

After the hair-raising descent the wood floor and lower slopes of Cwm George were searched for forms of *Polypodium interjectum* with little success. *Dryopteris affinis* subsp. *borreri* was also seen at the west of the trackway. The walk back caused a stir when a collection of goats/sheep were seen, resembling large white poodles, later determined as Anglo-Nubian goats with diagnostic pendulous ears. A specimen was not collected. It was by now too late to visit St. Fagans and the party returned to the hotel to prepare for a reception at the National Museum of Wales, Department of Botany.

Guests were given tours of the department and the herbaria. There was a small exhibition showing distribution maps for the *Asplenium trichomanes* group, *Dryopteris filix-mas* group and *Polypodium* in Wales; the difficulty of interpreting *Polypodium vulgare* records; a simplified cytology of the *D. filix-mas* group and *Polypodium* in the British Isles; *Polystichum aculeatum* forma *cambricum;* and the International Code of Botanical Nomenclature article 71: Monstrosity - of relevance to *Polypodium cambricum* var. *cambricum.* Microscopes were available for use. The newly commissioned herbarium had on display exsiccata of the *Dryopteris filix-mas* group, all the British *Polypodium* and hybrids, and the in vogue *Asplenium trichomanes* subsp. *pachyrachis.* The party ended an energetic day with a meal in town at the Old Orleans.

Sunday dawned grey but again remained dry with sunshine in the afternoon. The areas surrounding the South Wales coalfield were visited with the first stop at Cyfarthfa Castle above Merthyr Tydfil (32/0407) adjoining the A470 Brecon Road. The castle and grounds were built for the Crawshays, ironmasters of Merthyr and now house a school and small museum, with parkland for the people of Merthyr to enjoy.

The first native ferns seen beyond the pleasant gardens proved after careful examination to be *Dryopteris affinis* subsp. *cambrensis,* growing in a ditch adjoining the woodland. In this population the fronds showed much overlap of the basal pair of pinnules on each pinna with the rachis, and the basiscopic of the two were reflexed from the plane of the pinna giving the appearance of a pair of projecting steps up the centre of the frond. *D. affinis* subsp. *affinis* and subsp. *borreri* were soon located and this gave a wonderful opportunity to examine all three recognised British subspecies in the field. The features of the indusia, so important in determining the subspecies, were examined with hand-lenses. A large plant above a ditch further into the wood proved to be the robust form of *D. affinis* subsp. *borreri,* which has sometimes been confused with the *D. filix-mas* hybrid. Later microscope examination of the spores showed the majority to be good with a scattering of shrivelled ones, which is to be expected for an apomictic species. There was a hybrid near here, but this was *Fallopia* x *bohemica,* the hybrid Japanese knotweed.

The late morning was spent initially viewing the Brecon Beacons Mountain Railway train chug by on our arrival above the Taf Fechan (32/0610). We were to walk down the old mineral line below the disused Morlais Hill quarries. This carboniferous limestone area proved rewarding with *Asplenium viride* soon located growing below *A. trichomanes.* The latter was common along the walled cutting to the railway tunnel with fronds growing straight and outwards from the rock and having brick-red rachises. It was found to have mean exospore length in air of 35 microns with good spores, favouring subsp. *quadrivalens.*

Near the old railway tunnel *Gymnocarpium robertianum, Cystopteris fragilis, Polystichum aculeatum* and *Epilobium nerterioides* grew. For those who walked further, the now darkening fronds of *G. robertianum* were resplendent on raised areas above the trackway. In a shallow ditch a growth form of *Dryopteris filix-mas* was located with broad pinnules and equilaterally triangular basal pinnae. Martin Rickard managed to climb up through the steep wood and find a small colony of *Phegopteris connectilis* (a new 5km square for Glamorgan). This encouraged several more to climb up which led to a late lunch being taken in the Red Cow, Pontsticill.

With some people wishing to leave early the party split. The earlier party stopped for a brief view of Caerphilly Castle and after escaping from the entanglement of one-way streets drove up to the Warren (31/1685) on the sandstones at the southern edge of the coalfield. *Equisetum sylvaticum* was found on the edge of a mixed woodland under alder and beech, attractive in the slanting sunlight. A nearby roadside bank had five ferns growing in close proximity - *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* subsp. *borreri, D. dilatata* and *Oreopteris limbosperma.* We were later joined by the full lunchers who then departed to examine an *Equisetum telmateia* site in Morganstown (31/1281) on the alluvial plain of the River Taff. In the previous year *E. arvense* was dominant on a small compact mound of earth and rubble, but in one year it had been over-run by *E. telmateia.*

The other party journeyed to the dark beech woods of Coed Coesau-whips (31/1986) on the dolomite limestone and found a delightful colony of *Polystichum aculeatum,* one plant only having bifurcate fronds. After inspecting the *Equisetum telmateia* site the meeting ended with a final gaze up at the romantic Castell Coch nestling in the beech woods above the Taff's Well gorge.

THE AMERICAN FERN SOCIETY INC

wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum,* the scientific quarterly *American Fern Journal.* Membership costs $10.00 and $19.00 per annum, respectively, including overseas postage. For particulars please write to Dr David S Barrington, Dept. of Botany, University of Vermont, Burlington VT 05405, USA. Prospective members residing in Great Britain should write to Miss A M Paul, Dept. of Botany, Natural History Museum, Cromwell Road, London SW7 5BD.

REGIONAL MEETINGS 1990

WEST MIDLANDS

A R Busby

The season began as usual with an information stand at the Welcome to Spring Flower Show held at Arden School, Knowle, Warwickshire on the weekend of 14-15 April, with space kindly provided by the Solihull Horticultural Society. Later in the year we were provided with another opportunity to present the Society to the local gardening public, with an information stand at the Heart of England Flower Show held in Balsall Common, Warwickshire on the weekend of the 15-16 September. Thanks are due to Mrs Doreen Watson, Secretary to both flower shows for kindly providing space free of charge.

Vic and Jennifer Newey's Open Day - 1 July. A cloudy, chilly day was soon cheered by the warm welcome eleven members received from Vic and Jennifer when they kindly opened their garden to local members. Their garden proved wider and longer than the average garden found in many rural areas and blessed with much shade provided by several fruit trees that formed part of an orchard. Vic's interest in ferns developed many years before he joined the Society, as the fine plantings of ferns in his garden proved. Twenty-seven Watts Road is very much a shade garden and amongst his many ferns are other shade-loving herbaceous plants. Arisaemas featured prominently and we were particularly impressed with his plants of *Arisaema tortuosum* standing a metre high. Near the house is a large pond well furnished with water plants and over 50 fish. The margin of the pond supported fine plants of *Osmunda regalis* and a wide spread of *Thelypteris palustris.*

Vic is a keen spore sower and has raised a number of very interesting fern varieties. He has experimented with sowing spores from varieties of *Dryopteris dilatata,* a species not often sought after as a particularly good garden fern, yet he has raised some very attractive forms of it. In another greenhouse devoted to raising ferns from spores, Vic displayed many sowings at various stages of development. Vic and Jennifer provided us with a very interesting day rounded off with superb refreshments. Our thanks to them for their generous hospitality.

Martin and Hazel Rickard's Open Day - 23 September. Eighteen members assembled at the Old Rectory, Leinthall Starkes near Ludlow for a visit to Martin and Hazel Rickard's garden. What must surely be one of the best private collections of hardy ferns awaited our admiration. The members slowly toured the various beds and borders richly furnished with the most interesting species and varieties of hardy ferns, while Martin explained what we were seeing and related many stories of how he had come by them. A long list of the ferns seen is not possible as this journal would have to run to extra pages to record them all. Suffice it to say that the Centenary tour of British fern gardens will be visiting this garden and I urge members not to miss this particular one.

One piece of good news is that Hazel Rickard has now begun to propagate hardy ferns for sale to the public and she hopes to issue a plant list of choice varieties in the spring of 1991. Hazel requests a stamped addressed envelope if anyone is interested in seeing her list. I shall certainly be one of their regular customers. The afternoon ended within the warmth of their home where we enjoyed fine refreshments in good company with much fern talk and time to browse through Martin's large collection of fern books.

Our thanks to Martin and Hazel for their kind hospitality and for opening their home and garden to us.

LEEDS & DISTRICT

Jack Bouckley

Muker, Swaledale, North Yorkshire - 14 June. Our 1990 programme got off to a wet start when Richard Lamb led another of his Yorkshire Dales Field Studies. From Muker in Swaledale we worked upstream towards Keld through beautiful alpine meadows in full flower. There is an old record of *Equisetum variegatum* dating back quite a number of years which we hoped to rediscover. Dr W Sledge of Leeds University had seen this plant at Kisdon Force but although a thorough search was made around this area we were not lucky enough to find it again. It was still raining when we ate our dampish packed lunches down by the falls. We then clambered up a very steep, wet and muddy track back to the main footpath and on towards Catrake Force, but still there was no sign of the elusive variegated horsetail. Richard had obtained permission to visit a private area of Crackpot Hall estate which was on our return journey, so some went round that part while the others carried on downstream to Swinner Gill. We all met up again at that point and made towards our cars, once again through the meadow full of primroses, geraniums, alpine pansies and a host of other plants in full flower. We had seen nothing unusual in terms of fern species but had all enjoyed ourselves immensely.

Morecambe Bay, Lancashire - 7-8 July. Our next trip was to the Morecambe Bay area. We started on the Saturday in heavy rain with a trip to Gait Barrow, an NCC area, with Mr Tony Aldridge, the local Warden, as leader. This is a very interesting Nature Reserve, a possibly unique type of limestone pavement which was worn almost flat in the ice age - in other words, hardly any grykes in places. Even so there was plenty to be seen both on the pavement and in the woods and it seemed that Tony knew every plant personally. Ferns seen were *Asplenium adiantum-nigrum, A. ceterach, A. ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, Athyrium filix-femina, Cystopteris fragilis, Dryopteris dilatata, D. filix-mas, D. submontana, Equisetum arvense, Gymnocarpium robertianum, Polypodium vulgare, Polystichum aculeatum* and *Pteridium aquilinum*. We do thank the NCC and Mr Aldridge for making this trip so enjoyable.

In the afternoon we went over to Arnside to see John Mashiter for another tour of the lovely planting of ferns at his home. Then he took us round Grubbins Wood to see a drift of 'scollies' stretching for two or three hundred yards, as well as many other very interesting plants. Our sightings of ferns were increased by *Blechnum spicant*.

On Sunday morning we went to Roudsea Wood, another NCC Nature Reserve, where we were met by the Warden, Peter Singleton. He led the party for the first couple of hours during which time we witnessed the unusual sight of a woodcock picking up and carrying one of its half-grown chicks between its thighs as it flew to a place of safety away from us. When Mr Singleton had to leave the party, Jacqui Ogden took over as leader. We searched the quarry area for *Ophioglossum vulgatum* but were unable to confirm the record of this plant. The total ferns seen during Sunday morning were 14: *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* subsp. *borreri, D. carthusiana, D. dilatata, D. filix-mas, Oreopteris limbosperma, Osmunda regalis, Polypodium vulgare, Phegopteris connectilis* and *Pteridium aquilinum*.

After refreshments at the local inn, we travelled down to the north coast of the bay where the River Kent flows into the sea. Here we added *Adiantum capillus-veneris* and *Asplenium marinum* to our total for the day. This ended a very enjoyable and successful weekend.

Roulston Scar, North Yorkshire - 4 August. This outing came at the end of the hottest week any of us could remember. It had cooled just a little when we met the leader for the day, Nan Sykes, to botanise the area round Roulston Scar near the White Horse landmark at Sutton Bank. It was still fairly hot and we saw many casualties among the ferns due to the hot and dry weather, but some looked remarkably fit considering the conditions. We visited another couple of sites after lunch but they were not ferny areas. We only saw the common fern species but we all had a nice time and Nan found some more records of other plants for her forthcoming flora. Towards evening three of us visited Gormire to try and find *Ophioglossum vulgatum* which some of us had seen three years ago but it was rather late in the year and it had died back.

Upper High Stean, North Yorkshire - 1 September. Our leader was Michael Myers. We met about eight miles north of Pateley Bridge to do a study of a rocky steep-sided valley belonging to friends of his, Mr and Mrs Cale of Upper High Stean, who accompanied us on the trip. There had been a shower in the morning before we arrived and the rocky bed of the almost dried up river was very slippery, resulting in a couple of falls but there were no injuries. The gorge was full of surprises as we clambered over rocks and round bends but the time came for the return journey along the top of the bank. In the afternoon we travelled downstream hoping to find the place where there is a change to limestone but it was fenced off. It is certain we would have found more species had we been able to work the limestone area. We next went to see Michael's garden, where he maintains National Collections of *Hepatica* and *Primula marginata.* It is indeed a very interesting garden with some very well-grown ferns. Many thanks to Mr and Mrs Cale and Michael for such an enjoyable day. Plants found were *Athyrium filix-femina, Blechnum spicant, Cystopteris fragilis, Dryopteris affinis* subsp. *affinis, D. carthusiana, D. dilatata, D. filix-mas, Gymnocarpium dryopteris, Oreopteris limbosperma, Phegopteris connectilis, Polypodium vulgare* and *Pteridium aquilinum.*

Eggleston Hall, Barnard Castle, North Yorkshire. - 22 September. Eggleston Hall, just north of Barnard Castle was our venue for our last organised trip of 1990. Mrs W Gray, the owner, had given us permission to look round the gardens and grounds where there are some very fine fern varieties which had been planted many years ago, and there were also quite a few species growing in the wall etc. In the afternoon we went to another part of the estate along the bank of the River Tees downstream from the Hall. This is yet another wooded area in which the NCC is interested and it is kept locked. Mrs Gray's gardener came with us to let us in. It was a very interesting afternoon which resulted in our seeing *Asplenium scolopendrium, A. trichomanes* subsp. *quadrivalens, Blechnum spicant, Dryopteris affinis* subsp. *affinis* and subsp. *borreri, D. dilatata, D. filix-mas, Equisetum arvense, E. telmateia, Polypodium interjectum, P. vulgare, Polystichum aculeatum* and *Pteridium aquilinum.*

A very successful season it has been with thanks once again to all who let us on to their property, all those who led us and also to the three NCC districts by whom we had been given information so willingly.

SOUTH-WEST

M J Cragg-Barber

Cheddar Gorge, Somerset - 5 July. A very relaxed meeting led by Mary Potts on her home ground in the Cheddar Gorge. Before lunch we climbed up Black Rock Drove where *Gymnocarpium robertianum* surprised some by not smelling of lemon (others had not realised it might smell of lemon!). We saw good stands of both *Polystichum* species with one particular area full of *P. setiferum* and lady fern *(Athyrium filix-femina).*

After lunch we were taken further up the gorge to where *Polypodium cambricum* was beginning to flush and Mary was also able to show us some examples of *Dianthus gratianopolitanus,* a Cheddar rarity. We continued to enjoy the Potts' hospitality at their home and garden. A whistful atmosphere pervaded with the damage caused by gales and drought, and new horizons opening for its owners.

Birds Marsh Wood, Wiltshire - 30 September. At the end of September we met in the pouring rain and managed to find *Asplenium scolopendrium, Polystichum setiferum, Pteridium aquilinum* and *Equisetum arvense.* The main stand of *Dryopteris affinis* subsp. *affinis* had sadly been recently driven over by logging machinery. We were, however, pleased to see *Polypodium cambricum* and *P. interjectum* growing on trees and logs. In the afternoon we inspected the walls of Malmesbury. *Asplenium trichomanes, A. ruta-muraria* and *A. ceterach* were all recovering somewhat from the drought. A few sad examples of *A. scolopendrium* and *Dryopteris filix-mas* were found. Strangely, the common polypody was found growing well on a wall presumably of limestone along with wall-rue and in an alleyway right in the middle of Malmesbury beneath a shop window we managed to find an unappreciated example of *Pteridium aquilinum* growing up through the cobbles.

Bridgend - 7 October. The garden of Derek Fraser Jenkins at Bridgend is a perennial delight containing items collected from seed lists from around the world, unheard-of genera from unheard-of families introduced (and reintroduced) to us with a patience and charm we cannot forget. Amongst the ferns a fine example of *Adiantum formosum* stood out (once the fronds of *Dicksonia* etc. had been parted). *Equisetum robustum* revealed its true colours as its drunkenly leaning pink stems erupted through the bottom of other plants several feet from where it was supposed to be. This showed the relative decorum and propriety of *E. sylvaticum* in cultivation, an example of which was growing nearby. It was growing dark by the time we got round to the *Dryopteris* collection to which we could not do justice.

SOUTH-EAST

Petts Wood - 22 June. Eight of us met under a sudden cloudburst at 7.30 pm; the weather could only get better. *Asplenium ruta-muraria* and *Polypodium interjectum* were seen on a bridge at the entrance to the woods. *Equisetum arvense* in many forms was observed along the railway path. In a 60m stream into the Kyd Brook a find stand of *E. telmateia* was observed.

Much of the woodland consists of poorer Blackheath Beds supporting only bracken and sparse oak-birch woodland but this gives way in the north-west to damper, richer soils. A solitary *Asplenium scolopendrium* was spotted amongst an unusually foliose clump of *Dryopteris filix-mas* (51/447692). In another of these damp areas *Athyrium filix-femina* and *Dryopteris dilatata* are found while further into the damp area *Dryopteris carthusiana* spreads through several acres. Due to the storms and the subsequent increase in light, plus the drier weather the latter is being inundated by brambles making it very inaccessible.

That member for Portsmouth then joined us for tea and cake provided by Messrs Richard and John Acock. And you have guessed correctly, he insisted on seeing the ferns the following morning!

Pat Acock

South Downs, West Sussex - 5 May. A resplendent spring day found the first SE meeting yet further afield in a sumptuous beech wood on the South Downs between Petworth and Wisborough Green known as 'The Mens'. Besides the usual SE clan we were pleased to welcome a number of new members bringing the total by lunch-time to around 20. Our leader, Peter Grimbly, mentioned the age of the wood and as if in confirmation not ten yards in we saw a wild service tree. Insisting on walking all the way, the group were treated to many fine ferns but especially in two areas. The first had a whole range of *Dryopteris* including *D. affinis* subsp. *borreri*, with *Athyrium filix-femina* and *Blechnum spicant*, as well as a depauperate *D. dilatata* almost identical to the one found at Gunnersbury in 1988. The second area was one of those splendid mature *D. affinis* subsp. *affinis* sites with enormous crowns amongst which *Oreopteris limbosperma* was just unfolding.

The afternoon saw us on the steep, heavily wooded Bignor Hill above the famous Roman Villa. A strenuous scramble along the site of the hill under a yew-ash canopy brought us to the famous south-eastern outpost of *Gymnocarpium robertianum*. We were expecting just a few fronds but were delighted to see the plant growing extremely well over quite a sizeable area. The chalk scree was also host to some fine plants of *Polystichum setiferum* and *Asplenium scolopendrium*.

We were then treated to tea at Peter's, where Sue Grimbly and the family served us with all sorts of good things while we admired Peter's fine collection of ferns in walled gardens and terrariums in the greenhouse.

Pat Acock

Boulters End Common, High Wycombe, Buckinghamshire - 8 September. A total of 14 members (excluding our host, Crispin Rogers) met at Crispin's charming house, set in glorious Chiltern downland, an area not previously visited by the South-East group. A marvellous view from the lawn to the village of Fingest provided the back-drop for a woodland garden with a remarkable collection of ferns. Most were species rather than varieties, and *Dryopteris* was particularly well represented. The collection included *D. intermedia* and *D. amurensis*, which few of us had seen before. Other impressive species were *Dennstaedtia punctiloba* and *Hypolepis millefolia*, growing well in shady clumps. An exception to the species rule was a very foliose form of (?)*D. filix-mas*, collected from Boulters End Common.

We were kindly entertained to coffee by Crispin's Danish wife - indeed many of the species had come from growers in Denmark, clearly a high fern-conscious country.

After lunch at a suitably convenient pub (we had to walk 100 yards!), just before we travelled the short distance to Boulters End Common in the afternoon, we stopped to look at a flint wall where *Asplenium ceterach* was just emerging from its shrivelled drought-induced state. *Polypodium*, probably *P. interjectum*, and *Asplenium ruta-muraria* were also present.

The common is a fairly dry, chalk, mainly beech wood carrying quite a sparse, but very diverse fern flora. We centred on a swallow-hole - surely rare on chalk - where the damp conditions provided a habitat for *Athyrium filix-femina, Dryopteris filix-mas*, including a foliose form similar to the one in Crispin's garden, *D. affinis* subsp. *affinis* and possibly subsp. *borreri, D. dilatata* (probably the dominant species), and a few plants of *D. carthusiana. Pteridium aquilinum* was present throughout the wood, but the most surprising find, near the swallow-hole, was *Onoclea sensibilis*.

So finished a visit to an area which surprised us in its beauty and variety. We were most grateful to Crispin, both for his hospitality and for introducing us to this lovely part of south-east England.

Paul Ripley

EAST ANGLIA

Welwyn Garden City, Herts - 17 June. It was a fine warm Sunday morning as nine members made their way into Sherrards Park Wood within the boundary of Welwyn Garden City. Little was seen in the southern part of the woodland (mainly old oaks) so we went uphill into Temple Wood. Here we found good colonies of *Dryopteris dilatata,* some possible *D. carthusiana, D. filix-mas* and *Athyrium filix-femina.*

Lunch was consumed in the garden of an old inn on the old Roman road, then back into the woods. Here, soft clay ground underfoot indicated possibilities of something different. Several plants of *Blechnum spicant* were found in a ditch. These were recorded in the *Flora of Hertfordshire* by Pryor (ISBN 857.30941). He gives the location merely as Sherrards Wood, so it is possible we found a different colony to that recorded in 1885. Further exploration of this site revealed a single plant of *Dryopteris affinis* (morphotype/subsp. undetermined).

Our leader guided us to 'Six Ways', a circus of six main tracks in this ancient forest. By-passing Brockswood alongside the old Luton to Hertford railway track, we rejoined the cars and drove to 20 Melbourne Court, the home of Mary and Bernard Williams (our leader) to see 180 different varieties of ferns, all named, and several more unnamed ones. They are set in a small picturesque garden, down the sides of the nine cascades of the waterfall. Others such as the varieties of *Osmunda regalis,* are set in the bog garden and around the pool.

An excellent tea was consumed in the garden, followed by the showing of the video 'British Ferns', which was on loan from the Society.

The garden is open by appointment to any BPS members (Tel. 0707-333797).

Bernard Williams

Cambridge University Botanic Gardens and Wicken Fen, Cambridgeshire - 6 October. Twelve members assembled at Cambridge University Botanic Gardens for a tour of both the hardy and greenhouse ferns. A new catalogue (1990) of the plants in the garden is now available which is an excellent aid to locating the ferns. The hardy ferns are to be found in five main locations. The woodland area contains large plantings of *Matteuccia struthiopteris,* some *Polystichum setiferum* and *Athyrium filix-femina* varieties, *Dryopteris affinis* subsp. *borreri* and *Cystopteris fragilis. Asplenium scolopendrium* 'Cristatum' (labelled 'Crispum'!), *Polypodium cambricum, P. interjectum* and self-sown *Asplenium ruta-muraria* can be found on the main rockery. The bog garden contains *Osmunda regalis* and other species. *Polystichum aculeatum* and *Dryopteris affinis* subsp. *cambrensis* are situated on the limestone mound. More hardy ferns are to be found under glass beneath the staging of the alpine house and in the cooler end of the glasshouse corridor. Ferns are used with good effect in the conservatory, particularly *Woodwardia orientalis, W. radicans* and *Todea barbara.* The palm house has recently been rebuilt and replanted as an attractive walk-through feature with many tropical ferns and selaginellas used as underplantings.

Members were invited to consume lunch at the home of Margaret and Ian Nimmo-Smith and to view the ferns and many other interesting plants in their small, shady, walled town garden.

The afternoon was spent at Wicken Fen (52/564706) as a joint field trip with local naturalists wishing for an introduction to ferns. The BPS group was led by Anthony Pigott and the local naturalists by Owen Mountford. Gigi Crompton, the county recorder was pleased that *Dryopteris filix-mas, D. dilatata, D. carthusiana* and *Athyrium filix-femina* were all confirmed at Old Carr near some old brick pits, but competing with scrubby undergrowth. *Thelypteris palustris* was found in quantity, including a form with purplish stipes. The BPS group then set off to explore Verrall's Fen where *Dryopteris affinis* had been recorded in 1974-6. Unfortunately it was not found in its former location, and although the party searched other areas nothing further of interest was found. *Azolla filiculoides, Equisetum fluviatile* and *E. palustre* have been recorded in the past at Wicken but not seen in recent years.

Margaret Nimmo-Smith

SOUTHPORT FLOWER SHOW - 16-18 August

A R Busby

Southport Flower Show was memorable for all the wrong reasons. Staging and cloths for the Society stand were reduced by a third, resulting in cramped conditions and a poor background which failed to set off the ferns. While applauding the fact that the name boards had been repainted - the first time in nearly ten years, the management failed to ensure that the boards had been fixed to the stand where everyone could read it. All for the want of a hammer and two nails.

We also faced problems with the exhibits. In the competitive classes only four people entered ferns in the ten classes. Classes 5, 6 and 12 received no entries, the poorest attendance I can recall in the 17 years I have been attending Southport Flower Show. Southport is the only show in Britain which provides competitive classes for ferns, a wonderful opportunity to show the gardening public the wide variation in hardy ferns and a shop window for fern growing; we cannot allow it to disappear.

This year's judges were A R Busby and R G Key. The prize winners are listed below.

Class 5	Six Hardy British Ferns (dissimilar): No entries
Class 6	Six Greenhouse Ferns (dissimilar): No entries
Class 7	Three Hardy British Ferns: 1st R J Smith (1 entry)
Class 8	Three Foreign Ferns hardy in Great Britain: 1st R J Smith (1 entry)
Class 9	Three *Asplenium scolopendrium* (three varieties): 1st R J Smith (1 entry)
Class 10	Three *Polypodium* (three varieties): 1st R J Smith (1 entry)
Class 11	Three *Polystichum:* 1st R J Smith (1 entry)
Class 12	Three *Athyrium* (three varieties): No entries
Class 13	Three *Dryopteris* (three varieties): 1st R J Smith (1 entry)
Class 14	Three *Asplenium* (excluding *A. scolopendrium):* 1st R J Smith (1 entry)
Class 15	One British Fern (any kind or variety): 1st R J Smith, 2nd M Nimmo-Smith, 3rd W N Howarth (3 entries)
Class 16	One Greenhouse Fern: 1st M Nimmo-Smith, 2nd R J Smith, 3rd D & S Shea (4 entries)

The 'Challenge Trophy' awarded to the exhibitor gaining the most points in the fern classes was won by R J Smith.
Many thanks to Jack Bouckley, Ray Smith and Margaret Nimmo-Smith for helping with the staging and manning of the Society's stand.
I would welcome any enquiries about exhibiting ferns at Southport Flower Show and will advise on the identification, growing and presentation of exhibits.

OBITUARY

RICHARD ERIC HOLTTUM ScD 1895-1990

Dr Eric Holttum, the Grand Old Man of pteridology, died on 18 September 1990 at Kew, Surrey. He had reached the end of a long and productive life and had drawn his scientific work to a close with his account of *Tectaria* for *Flora Malesiana,* sent to the Editor in 1988. He was mentally active to the end, and over the last few months had been piecing together his autobiography.

Holttum was born in Linton, Cambridgeshire, on 20 July 1895. He went to the Quaker schools of Saffron Walden and Bootham, York, continuing his education at St John's College, Cambridge. His college years, however, were interrupted by the First World War. Holttum, a Quaker, served in the Friends Ambulance Unit and received the Croix de Guerre for his active service.

Following his return to Cambridge, he obtained a First Class Honours degree in Botany in 1920 and as part of his post-graduate studies on fossil ferns, he carried out fieldwork in Greenland with Prof. A C Seward. The fossils he collected were related to present-day tropical species, and in 1922, perhaps with a desire to see things first-hand, he successfully applied for the Assistant Directorship of the Singapore Botanic Gardens, becoming Director in 1926. There his life-long interest in ferns was established. He was an observant botanist and also made very significant studies of many other groups, in particular, orchids, gingers, bamboos and sedges. He was an avid plant collector and made many trips to different States of Malaya, and to British North Borneo (now Sabah), where he made the first substantial collection of pteridophytes of Mt Kinabalu in 1933.

His contribution to the botany of SE Asia has been well documented in his own account published for his eightieth birthday (in *Fl. Malesiana Bull.* 28: 2477-2500, 1975, which has a complete list of his publications to that date). In 1942 Japanese troops invaded Singapore, but luckily his wife and two daughters had already left for Australia. Aware of the value of Holttum's pre-war work, the Japanese ordered him to continue his research at the Gardens. He therefore spent the three and a half years of the occupation on uninterrupted taxonomic research which laid the foundation of many substantial publications, including his account for *Flora of Malaya,* Vol. 2, Ferns (1954).

The writing of *Ferns of Malaya* gave Holttum a broad perspective of the relationships of genera and the delimitations of families, and he began to see fundamental links that were not apparent in the accepted classification at the time, that of Carl Christensen. These views Holttum published as 'A revised classification of Leptosporangiate ferns' in the *Journal of the Linnean Society of London (Botany)* (vol. 53: 123-158, 1947) a few months before E B Copeland's *Genera Filicum,* which unfortunately over-shadowed it. They formed, however, the basis of Holttum's approach to further fern studies and the arrangement for the pteridophyte series of *Flora Malesiana,* of which he was to become the general editor.

In 1949 Eric Holttum resigned from the Directorship of the Gardens and became the first Professor of Botany at the new University of Malaya in Singapore. He retired to England in 1954 and settled at Kew, where he was given facilities to work in the Herbarium at the Royal Botanic Gardens until his death. A true field man, Holttum loved his Wednesday visits to the fern houses there, where many of his own living collections were growing. He encouraged Bert Bruty, Supervisor of those houses in the 1950's and 1960's, and explained the ecological requirements of these tropical plants.

It was extremely sad that in the mid 1970's he began to lose his hearing and although he mastered lip-reading, having a two-way conversation became increasingly difficult. This did not stop him attending meetings however, and in 1981 he went to the International Botanical Congress in Sydney. It was there that the International Association of Pteridologists was set up and Eric Holttum was a natural choice for its first President, a post he held until the next Congress in 1987.

Holttum had been given many accolades: an ScD from Cambridge University, an honorary DSc from the University of Malaya, gold medals for orchidology from America, Malaysia, and the RHS, and for excellence in tropical botany by the Pacific Tropical Garden in Hawaii. His great achievements, particularly since his 'retirement', are an inspiration and example to us all.

Holttum joined the BPS in 1950 and members of the Society will remember him as our President from 1960-63, and as a Vice-President thereafter. Our annual meeting at Kew was for years rounded off with tea at the Holttums, when many of his Malaysian treasures could be seen. With his wife, Ursula, he frequently joined our field excursions, constantly pointing out interesting features about our native ferns - the number of vascular strands in the stipe, the unicellular hairs in *Thelypteris*, glands on the scales of *Phegopteris*. He never ceased to teach, yet it was always in an inspiring, friendly, modest, almost conversational style over a meal, on the train, or walking in the field. He was also excited at things others showed him, and was often heard to say that characteristic 'Golly, golly', a phrase Ursula disliked and repeatedly scolded him for using, but to no avail.

A C Jermy

MEETINGS 1991

Meetings Secretary: A C Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P J Acock, N J Hards, J M Ide, A C Pigott, P H Ripley

Sat 2 March – **Spring Indoor Meeting – London**
Location: The Natural History Museum, Cromwell Road, London
Leader: Nick Hards Time: 11.00

Tues 21 – Fri 24 May – **Chelsea Flower Show: BPS Stands**
Further Info.: Barry Thomas

Fri eve 7 – Sun 9 June – **Weekend Field Meeting – Yorkshire Dales**
Leader: Jack Bouckley
Centre: The King William IV, Blossomgate, Ripon

Fri eve 21 – Sun 23 June – **Weekend Field Meeting – Radnorshire**
Leaders: R G Woods & Pat Acock
Centre: Brynafon Country House, Rhayader, Powys LD6 5BL

Sun 7 – Thurs 11 July – **International Symposium on the Propagation and Culture of Pteridophytes – London**
Organisers: Jennifer Ide & Clive Jermy
Location: Imperial College

Fri 12 – Sun 14 July – **National Tour of British Fern Gardens**
Organiser: Martin Rickard

Sat 13 July – **Competitive Fern Show – Pebworth**
Organiser: Hazel Key
Location: Pebworth Village Hall, Pebworth, Stratford-on-Avon

Sat eve 3 – Sat 10 August – **Week Field Meeting – Isle of Skye**
Leader: Clive Jermy

Thurs 5 – Sat 17 August – **Southport Flower Show: BPS Stand**
Further Info.: Matt Busby

Wed eve 18– Thurs a.m. 26 September – **Centenary Week Field Meeting & AGM – Cumbria**
Leader: Matt Busby
Centre: Heaves Hotel, Kendal, Cumbria LA8 8EF

Sat 12 October – **Autumn Indoor Meeting – Royal Botanic Gardens, Kew**
Location: Lower Nursery, RBG, Kew, Surrey
Leaders: Peter Bradley & Jennifer Ide Time: 11.00

For full details of these meetings, including information on accommodation, please see the separate Meetings Programme sheet.

REGIONAL MEETINGS

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Wessex M J Cragg-Barber, 1 Station Cottages, Hullavington, Chippenham, Wilts. SN14 6ET
West Midlands A R Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD
Leeds & District J H Bouckley, 209 Woodfield Road, Harrogate, Yorks. HG1 4JE
South-East England P H Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia B Williams, 20 Melbourne Court, Welwyn Garden City, Herts. AL8 6LL

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44 Hoghton Street, Southport, Merseyside, PR9 0PQ

The British Pteridological Society
BULLETIN

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1991

BRITISH · PTERIDOLOGICAL · SOCIETY

CENTENARY
1891 ~ 1991

Edited by A.M. Paul

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Booksales Organiser: S.J. Munyard, 234 Harold Road, Hastings, East Sussex, TN35 5NG

Trustees of Greenfield and Centenary Funds: A.R. Busby, Dr N.J. Hards, Dr B.A. Thomas

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £12.50, Personal Members not receiving the *Fern Gazette* £9.50; Student Members £7; Subscribing Institutions £20. Family membership in any category is an additional £2. Applications for membership should be sent to the Assistant Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £3 extra to cover bank conversion charges). Airmail postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: Centenary logo designed by Nicola Plummer.)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 4 1991 No. 2

THE CENTENARY - A RETROSPECTIVE

It can hardly have escaped your notice that the British Pteridological Society celebrated its centenary in 1991 and that during the year we promoted our interests in ferns in many different ways. To mark the centenary we organised many special events and meetings and publicised the Society through exhibitions, special publications and the media.

Margo Ladell's very professional press release led to articles on the Society in the national and local press and in gardening magazines such as *Plants and Gardens* and *Amateur Gardening,* as well as to ferns being featured on national and local television programmes, including *Gardeners' World.*

We produced several sets of a travelling exhibition that toured most of the British Isles throughout the year. They portrayed the diversity of ferns in their native habitats and showed a range of species and varieties in cultivation. The distribution, evolutionary history and ecology of ferns and their needs for conservation were also outlined, together with details of the Society, its activities and publications.

Apart from our well established presence at the Southport Flower Show, the Society was prominent at the Royal Horticultural Society's Chelsea Flower Show in May. Our own exhibit in the scientific section featured the travelling exhibition, enhanced by a display of fern species and varieties. In addition, our range of publications on understanding and growing ferns was on sale. Congratulations must go to the organising team for winning the Silver Medal for our exhibit. The RHS itself had a spectacular display of ferns which was to a large extent made possible by our members, who contributed and loaned a large number of plants and manned the stand. The Society was also promoted by the National Council for the Conservation of Plants and Gardens, whose stand at the Hampton Court International Flower Show in July featured a display of ferns.

Our Symposium on Cultivation and Propagation of Pteridophytes was held at Imperial College in July. This highly successful meeting brought together people from around the world who are in the forefront of the cultivation and propagation of pteridophytes. Three days of lectures with tours of the fern collections and micropropagation unit at The Royal Botanic Gardens, Kew, together with the conference dinner, made this both an instructive and unforgettable meeting. The Proceedings of the Symposium will be published in the not too distant future.

Following on from the Symposium was the National Tour of Fern Gardens which was very ably organised and led by Martin Rickard. The party were comfortably conducted around the country by coach to see a wealth of interesting fern collections. This included the Competitive Fern Show held in the Village Hall at Pebworth, near Stratford-on-Avon, on Saturday, July 13th. This show, organised by Fibrex Nurseries in association with the village Flower Festival, was the venue for a spectacular selection of members' ferns shown in a wide range of entry categories. The display certainly pleased both fern enthusiasts and the general public alike. Prizes were awarded for the best entries and, although it was a great pleasure to award them, I am grateful that I was not involved in what must have been the very difficult job of judging.

The year culminated in our Centenary Celebration meeting and AGM in the Lake District, where it all started one hundred years ago. From 19-25 September, we visited many ferny places, from wet woodland to upland limestone pavement, and listened to evening talks at the Heaves Hotel, near Kendal. One highlight for us all was the visit to Mr Wiper's garden, where the first meeting of the Society was held at 2.30pm on 23 September 1891. Here we found many beautiful varieties still surviving and being cared for by the new owners. Another was the Centenary Dinner at the Woolpack Hotel in Kendal, where we were entertained after dinner by that well known gardening personality Geoffrey Smith.

Although our regular and special publications contain a wealth of information for all who are interested in ferns, this centenary year had to be a special one for the Society. To mark it we launched four special publications. *The Cultivation and Propagation of British Ferns* was written by Jimmy Dyce as a guidebook for interested amateur gardeners. An anthology of articles and illustrations in *The History of British Pteridology 1891-1991* charts our first hundred years and here you will find details of the Society, its members and the changes in scientific and horticultural knowledge of ferns that have occurred during this time. *The British Pteridological Society Abstracts and Reports and Papers Read at Meetings 1894-1905* is a reprint of our very rare first publications that contain a fascinating insight into the early years of our Society. *A World of Ferns* was made possible by the generous donation of photographs by so many of our members. It is these illustrations that led to *The Sunday Times* describing it as *'outstanding', 'Supremely well-illustrated'* and as a book *'that has rarely been bettered'*.

The Society has always been many different things to many people, and we have constantly tried to present all aspects of pteridology to our members. Money is naturally a restriction and our normal membership subscription rates are insufficient to support many of the extra activities that we would like to see undertaken. Therefore I took the opportunity afforded by the centenary to launch a fund-raising campaign to create the Centenary Fund from which the interest can be drawn to further the interest and knowledge of pteridology.

Our first centenary has passed. One hundred years on the Society is still flourishing and catering for all those interested in the taxonomy, classification, evolution, ecology and conservation of ferns as well as for the traditional enthusiasm for growing them. I have been privileged to be President during the Centenary Year and have thoroughly enjoyed my time in the 'hot seat'. Of course, the year would not have been possible without the efforts of your committee, centenary, meetings and publications sub-committees and so many other members who willingly gave their time. We now trust future members to take care of the Society and pursue its aims. Ferns are here to stay and we all trust that the Society will last with them.

Barry A Thomas

SECRETARIAL NOTES

COMMITTEE VACANCIES - In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1992. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 5 September 1992.

SUBSCRIPTIONS 1992 - Members are reminded that subscriptions for 1992 are due on the 1st January 1992 and should be paid to the Membership Secretary, British Pteridological Society, C/o Dept. of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL - Our journals can be sent by airmail to overseas members, provided they advise the Assistant Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY - Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. There are two transferable tickets available for all RHS Shows other than the Chelsea Flower Show. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLE - The *American Fern Journal,* a quarterly containing much information for those seriously interested in ferns, is circulated to Reading Circle members. To join, apply to the General Secretary.

THE GREENFIELD FUND - This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

THE CENTENARY FUND - This fund will be used to promote the study of all aspects of pteridophytes - horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to avail themselves of this fund should contact the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS - These are such good value that it is a wonder that more people do not avail themselves of them. Most issues of the *Bulletin* and all of the *Pteridologist* are available, but only odd parts of the *Fern Gazette* are now available prior to volume 7 and some parts are sold out even to volume 10. Please send for a list if you are interested. A bumper bundle of older parts of the *Fern Gazette* is still available, post included, at £6.

For all information regarding back numbers, please contact Patrick Acock, 13 Star Lane, St. Mary Cray, Kent, BR5 3LJ.

BINDERS for the BPS BULLETIN and PTERIDOLOGIST - Binders for volumes of the BPS *Bulletin* and *Pteridologist* are available from the General Secretary. The *Bulletin* binders are attractively produced with red hardboard covers and gold blocked lettering on the spine: only £5 each, including postage and packing.

Binders for the *Pteridologist* are available with mustard hardboards and gold blocked lettering on the spine. Each binder holds one volume (six parts). £5 each including postage and packing. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A R Busby.

BPS VIDEO "BRITISH FERNS"

With over fifty species of ferns the British Isles has a remarkably varied fern flora. Many species have distinctive distributions reflecting regional variations in environmental conditions. In particular the cool relatively damp environments of the North and the mild Western fringes of Britain bring together species typical of Atlantic, Arctic and Alpine regions, resulting in a fern flora that is unique to the British Isles.

This twenty-five minute video shows most of our native ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

The video has been funded by Schering Agriculture and the National Museum of Wales. It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

CENTENARY CELEBRATIONS WEEK AT KENDAL PHOTOGRAPHS OFFER - By kind permission of John Collins, prints of the group photograph taken in front of the Heaves Hotel on Saturday 21 September 1991 will be available from the General Secretary. Also on offer are prints of individual members taken during the meeting. For details of the group photograph, photos of individuals, sizes and costs of the prints, please send a stamped addressed envelope to the General Secretary.

THE AMERICAN FERN SOCIETY INC

Wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum,* the scientific quarterly *American Fern Journal.* Membership costs $11.00 and $20.00 per annum, respectively, including overseas postage. For particulars please write to Dr Richard L. Hauke, 456 McGill Place, Atlanta, Georgia 30312 USA. Prospective members residing in Great Britain should write to Miss A M Paul, Dept. of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD.

ANNUAL GENERAL MEETING 1991

MINUTES of the 88th ANNUAL GENERAL MEETING held at the Heaves Hotel, near Kendal, Cumbria on Saturday 21st September 1991 at 2.15 pm.

IN THE CHAIR: The President, Dr B A Thomas.

PRESENT: R G Ackers, P G Barnes, J H & R Bouckley, P D A Boyd, A R Busby, J A & M W Collins, M J & L I Craddock, T Craddock, L Dugdale, J W Dyce, P J Edwards, D Fortune, M Garstang, M Gibby, N J & E Hards, M Harris, R Hibbs, A E Hoare, G K Hoare, D M & K H Holly, V Horner, J M Ide, A C & A Jermy, C J Kelsall, D J Kershaw, E Knox-Thomas, M Ladell, A M Leonard, C E Munyard, S J & K Munyard, M E Nimmo-Smith, A H Ogden, A M Paul, A C Pigott, M H Rickard, N R Schroder, G Stark, R J & B Smith, R N Timm, O Walker.

OPENING ADDRESS: The President welcomed members to the AGM and noted that two descendants of the original families had been present, Miss Emily Bolton and Mr Whiteside. He also welcomed Mrs Olive Walker, the wife of a former president, the late Dr Stanley Walker.

ITEM 1 - APOLOGIES FOR ABSENCE: P J Acock, J M Camus, J A Crabbe, R Kaye, J R Woodhams.

ITEM 2 - APPROVAL OF MINUTES: The Minutes of the 87th AGM held on 3rd March 1990 had been published in the 1990 Bulletin and were approved by the Meeting.

ITEM 3 - MATTERS ARISING FROM THE MINUTES: There were none.

ITEM 4 - HONORARY GENERAL SECRETARY'S REPORT: It is 18 months since my last report, presented to the AGM in March 1990 and so I find myself reporting on two seasons. 1990 was a busy and successful year with membership recording a small gain, however, the main feature of 1990 was the preparation work for our 1991 Centenary Celebrations carried out by the Committee and an ad hoc Sub-committee which spent many hours considering how the Society should mark our special year.

MEETINGS - 1991 is now sufficiently behind us for me to reflect on its success. There were times when, for one reason or another, the Committee felt that it may have had to curtail certain events. Happily this proved unnecessary and the full programme as planned has passed most successfully.

Our stand in the scientific section of the 1991 Chelsea Flower Show in May marked the start of the celebrations and proved both effective and rewarding, for we gained both public attention and a Silver Medal. It presented the Society to the gardening public in a most attractive and informative way. The Royal Horticultural Society also staged a display of hardy ferns to celebrate the Centenary, using ferns loaned by several members. A special vote of thanks is due to Mr Ray Waite and the Royal Horticultural Society, to Bob Johns and the Royal Botanic Gardens, Kew, to Hazel Key for her support and encouragement and to the many members who helped on both stands.

In July, the Society hosted an International Symposium on *The Propagation and Cultivation of Pteridophytes* at Imperial College, London and it proved to be a tremendous success. The Committee found it most gratifying that so many overseas members and guests felt it worthwhile to attend the Symposium and support the Society in its Centenary Year. The success of the Symposium was largely due to Clive Jermy and Jennifer Ide and a vote of thanks is due to them and to all the speakers. The Symposium was followed by the three day National Tour of Fern Gardens, another highly successful event which, according to the comments I overheard from those attending, proved to be a most interesting and memorable event thanks to Martin Rickard who conceived the idea and carried it through to its successful conclusion.

During July we enjoyed a unique event which, after an unpromising launch, proved every bit as successful as our other meetings. Despite the average member's reluctance to exhibit ferns competitively, Pebworth Fern Show filled the village hall with around 300 ferns, and proved to be a novel and eye-opening experience to the general public. Again, thanks to Hazel Key for the original concept of Pebworth 1991, to Fibrex Nurseries Ltd for arranging and preparing the venue and to Stuart Williams for judging the show with such care and consideration, also a thank you to those who travelled long distances to exhibit their treasures and made the show the success it was.

All the meetings throughout the year so far have been extremely well attended.

MEMBERSHIP - This year the Society has enjoyed a great deal of publicity given to it on television, local radio and in the local and national press. Most of this is due to the unstinting hard work of the Meetings Secretary, Anthony Pigott, and Margo Ladell. Margo put in many hours to ensure that the media and any likely sponsors knew of our Centenary and our celebrations in a very professional way. Never has the Society enjoyed such a high profile and this is reflected in the high number of new members we have gained this year. I am indebted to the Membership Secretary, Alison Paul, for the following figures. By the end of 1991 we shall have enrolled over one hundred new members. This is by far the highest number of new members we have gained in one year. At the end of 1990 the total membership figure was 674 and at 16th September 1991 our total membership was 710.

PLANT AND SPORE EXCHANGE SCHEMES - Both schemes continue to prove popular with our members, however, Rosemary Hibbs, our Plant Exchange Organiser, would like to see more members taking advantage of fellow members' generosity. Members are encouraged to send in their list of wants even if they do not have plants to exchange at the time.

Margaret Nimmo-Smith, our Spore Exchange Organiser, reports that over the two seasons since her last report, the list of taxa has increased from 560 in 1989 to 701 this year. Members' entitlement was increased in 1991 from 20 packets to 25, with donors now entitled to 35 packets. *Woodsia ilvensis* topped the popularity poll in 1990 but no information is yet available for 1991, although it is probable that *Camptosorus rhizophyllus* is the candidate, offered for the first time for several years. Otherwise, small hardy or near hardy species remain popular with British growers and tree-ferns with our overseas members. Margaret thanks the many donors at home and around the world who make the operation of the Spore Exchange possible and from whom she has received much encouragement.

BOOKSALES - This has been very ably taken over by Stephen Munyard. He reports a very busy year, which has seen four new publications added to our booklist.

REGIONAL GROUPS - These continue to flourish at local level and the Committee urges the membership to give them their support and encouragement. Unfortunately, not all areas are covered by a regional group, but it is hoped there are moves to re-establish a group in Scotland.

Once again I have to close my report with comments on the passing of two members. Dr Eric Holttum died in September 1990 and his obituary appeared in the 1990 Bulletin. Those of us who enjoyed his company, benefited from his immense knowledge of pteridophytes and enjoyed his hospitality at Gloucester Court will consider his passing with great sadness. During 1991, our past President, Mr Henry Schollick OBE died and his obituary will appear in the 1991 *Bulletin*. The Secretary's report was approved and adopted by the meeting and the President thanked Mr Busby.

ITEM 5 - HONORARY TREASURER'S REPORT: Nick Hards circulated his balance sheet to the meeting. He explained that 1990 had been the year before the increase in subscriptions, but had unexpectedly made a small surplus due to an increase in subscriptions from new members. Also in 1990 the *Gazette* had been produced for the first time as two issues, although each number was smaller than the previous single issues. Extra postal costs had ensued but this had also given an additional opportunity for mailing news sheets to members. Postage costs had also been less than expected as two journals had on one occasion been sent out together. The initial cost of the Symposium had been absorbed by the General Fund.

Bank charges had increased for 1990 but would increase steeply in 1991. However, a new type of bank account had been ratified by the Committee that morning which would put an end to bank charges. There had been a reprint of *Guide to Hardy Ferns* by Richard Rush, the Society's Special Publication No. 1.

The Treasurer encouraged members to apply to the Greenfield Fund which gives grants to amateurs for research. He also explained that it was intended that money from the Centenary Fund should be loaned to the Publications Account to help launch new publications. It was also intended that this fund should give grants to both amateurs and professionals for projects not within the scope of the Greenfield Fund. The Treasurer's Report was adopted by the Meeting, and the President thanked Nick Hards.

ITEM 6 - HONORARY MEETINGS SECRETARY'S REPORT: Anthony Pigott reminded members that he was reporting on a period of 18 months. He said that the highlight of 1990 had been the week meeting in Brittany, the first meeting abroad for many years. 1991 had seen the special centenary meetings, starting with the spring indoor meeting at The Natural History Museum, a day event without the AGM. There had been field meetings in Yorkshire, Radnor and Skye. The week meeting in Skye had been notable for the high attendance not only by British members, but had included participants from Finland, Germany, Belgium and France who had all enjoyed the ferning. A record attendance was also occurring at the present well organised meeting in Kendal.

Anthony Pigott then drew members' attention to the autumn meeting to be held in October at Kew. It was hoped to organise meetings in 1992 in the following locations: Derby for the spring indoor meeting, the day meeting at Kew in May, and field trips to Galloway, Devon, Hampshire, Northumberland and Spain. He felt that it was very important that the momentum of the Centenary Year should be kept going with as interesting a programme as possible. He also commended regional meetings to members, particularly those who were unable to attend national meetings. He was particularly pleased that the East Anglian Group had started and that the last meeting had been well attended. It was noted that there had been an increase in horticultural interest in meetings. Anthony made a plea for ideas for meeting venues and also for help arranging meetings. Finally he thanked Patrick Acock, Paul Ripley, Nick Hards and Jennifer Ide for their hard work and help on the Meetings Sub-committee.

ITEM 7 - EDITORS' REPORTS: *Fern Gazette* - Unfortunately J A Crabbe had been unwell. Part of a letter from him was read to the meeting, particularly thanking Dr Mary Gibby for her help. It was also reported that he was retiring from the position of Editor but was prepared to work as Assistant Editor. The number of papers received was sufficient to fill two parts. The Committee had had recent discussions on content and had made recommendations to make the content slightly more readable to the non-specialist.

Pteridologist - Martin Rickard was pleased to report that both the 1990 and 1991 editions of the *Pteridologist* had been satisfactory and on time. The content included items of general interest, fern botany but not at a high technical level, fern growing and related subjects. He found that soliciting articles on fern growing was difficult. He appealed for more contributions, and if members felt reluctant to write themselves, it would be possible for a Committee member to help with the article or gather the information in the form of an interview.

Bulletin - Alison Paul reported that she was happy with the 1990 edition. She appealed for more photographs of meetings from members for inclusion in future editions.

ITEM 8 - ELECTION OF OFFICERS AND COMMITTEE: Before the elections, the retiring President, Barry Thomas, thanked everyone who had helped him during his three and a half pleasant but hectic years. He particularly thanked the Secretary, A R Busby, for his support at different times and the Treasurer, Nick Hards, for ensuring the finances ran smoothly and that there were sufficient funds for the publications. He thanked the Centenary Sub-committee, especially Margaret Harris for acting as Secretary and Co-ordinator. Barry thanked Jennifer Ide and Clive Jermy for their work on the Centenary Symposium which would not have been so successful without their efforts. He thanked Martin Rickard for the successful Garden Tour, which had been particularly attractive to overseas members. Margo Ladell was thanked for her magnificent efforts with publicity and Anthony Pigott for such a successful meetings programme.

Election of President - Jack Bouckley was recommended by the Committee to the AGM as the next President of the Society and was duly elected.

Jack Bouckley then took the chair for the rest of the meeting. He thanked the members for their confidence in electing him as President. There was a vote of thanks to Barry Thomas on his retirement as President.

Election of Vice-Presidents - C N Page and M H Rickard were proposed by the Committee and elected.
Election of Officers:- Honorary General Secretary - A R Busby.
Honorary Treasurer - N J Hards.
Honorary Meetings Secretary - A C Pigott.
The President was pleased to note that these Officers were all willing to serve for another year and they were elected unaminously.

Election of the Committee - The Secretary reported that Jennifer Ide, Christopher Fraser-Jenkins and Jack Bouckley were retiring. The Secretary had only received two nominations for the Committee: Graham Ackers proposed by A M Paul and seconded by A C Jermy, and Nick Schroder, proposed by A R Busby and seconded by M H Rickard, who were both duly elected. The remaining vacancy might be filled by a co-option at a later date. The remaining members of the Committee: P J Acock, P G Barnes, J M Camus, M Nimmo-Smith, R N Timm, T G Walker, and J R Woodhams were elected 'en bloc'.

Election of Honorary Editors - Barry Thomas, Martin Rickard and Alison Paul were elected to serve as editors of the *Fern Gazette, Pteridologist* and *Bulletin* respectively.

ITEM 9 - ELECTION OF AUDITORS: Ray Smith, proposed by A R Busby, seconded by J H Bouckley and Graham Hoare, proposed by A R Busby and seconded by J M Ide were duly elected.

ITEM 10 - ANY OTHER BUSINESS

COMMITTEE APPOINTMENTS - The Secretary read out the list of Committee Appointments which were as follows: Membership Secretary - Alison Paul; Minutes Secretary (a new position to assist the Secretary) - Margaret Nimmo-Smith; Merchandise Sales - Anthony Pigott; Booksales - Stephen Munyard; Plant Exchange Organiser - Rosemary Hibbs; Spore Exchange Organiser - Margaret Nimmo-Smith; Fern Distribution Recorder - Anthony Worland; Archivist - A R Busby (taking over from N J Hall who had retired from the post); American Fern Journal Reading Circle Organiser - A R Busby.

PUBLICATIONS - Jimmy Dyce was now working on the second edition of his book *The Cultivation and Propagation of British Ferns* as the first edition, published in May, was almost sold out. 1991 had also seen the publication by The Natural History Museum of *A World of Ferns* by J M Camus, A C Jermy and B A Thomas, and the Society had now published *The History of British Pteridology 1891-1991* edited by J M Camus and reprinted the *'Pre-Gazette Papers'*. Various leaflets aimed to inform the general public at the Chelsea Flower Show had also been produced on such subjects as where to see ferns, ferns for special purposes etc. Nick Hards proposed a special vote of thanks to Josephine Camus and Alison Paul for their tremendous job in editing *The History of British Pteridology*.

Martin Rickard said how very honoured he was to be elected as a Vice-President.

The President then asked the retiring President, Barry Thomas, to announce the Committee decision to award the Stansfield Medal to Clive Jermy. It was explained that this medal was awarded very rarely, the only other living recipients being Jimmy Dyce and Reg Kaye, and was awarded for outstanding services to pteridology. It was first awarded at a special meeting in 1937, *'to be awarded on the directions of the Committee to persons contributing to the advancement of the fern cult'*. Barry Thomas then read the following extract from *The History of British Pteridology: 'When Clive Jermy took over the editorship of the* Gazette *the direction of growth of the Society changed fairly dramatically. The* Gazette *became primarily an academic botanical publication, and the BPS began to be recognised as a scientific society. This change probably resulted in the biggest ever growth in membership of the Society as botanists across the world joined, and the Society really became fully international'*. The announcement was greeted with applause.

Clive Jermy replied that he was fully aware of the great distinction accorded him and thanked the membership. However, he stated that nobody can do things by themselves but achievements were only possible by team work. *'If I have achieved anything, it is thanks to many people such as Jimmy Dyce, who have encouraged, spurred, fought and goaded me into helping develop the Society along these lines.'*

There was no other business and the meeting closed at 3.35 pm.

A R Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1990

ORDINARY ACCOUNT

(1989)	INCOME:	
6457.45	SUBSCRIPTIONS	£8835.87
611.29	INTEREST	820.90
100.00	BOOKSALES	251.00
5.00	DONATIONS	64.10
-	SPORE EXCHANGE	3.00
161.01	MERCHANDISE	418.00
-	SUNDRIES	134.50
7334.75	**TOTAL INCOME**	£10527.37
	EXPENDITURE:	
1538.00	METLOC - PTERIDOLOGIST	1626.00
1978.00	METLOC - GAZETTE	2692.00
949.00	METLOC - BULLETIN	1245.00
243.00	PRINTING AND STATIONERY	1256.30
1632.15	ADMINISTRATION AND POSTAGE	1500.00
421.10	SUBSCRIPTIONS TO SOCIETIES	25.10
87.28	BANK CHARGES	106.28
50.00	PLANT AND SPORE EXCHANGE	52.80
52.72	MEETINGS	121.00
50.00	CENTENARY EXPENSES	1346.21
182.85	MERCHANDISE	172.50
7184.10	**TOTAL EXPENSES**	£10143.19
	BALANCE FOR 1990	384.18
	BROUGHT FORWARD FROM 1989	4348.27
	CARRIED FORWARD AT 31.12.1990	£4732.45

PUBLICATIONS ACCOUNT

	BALANCE BROUGHT FORWARD		3798.01
	REPRINTING COSTS		412.00
			3386.01
326.88	SALES - Journals and Offprints	571.59	
404.00	- Guide to Hardy Ferns	118.00	
308.00	- Hardy Ferns	101.00	
444.00	- Fern Names & Their Meanings	130.00	
-	ROYALTIES	1000.00	1920.59
	CARRIED FORWARD AT 31.12.1990		£5306.60

GREENFIELD FUND

BALANCE BROUGHT FORWARD	£1703.08
INTEREST RECEIVED	169.65
CARRIED FORWARD AT 31.12.1990	£1872.73

CENTENARY FUND

BALANCE BROUGHT FORWARD	£801.63
DONATIONS RECEIVED	500.00
INTEREST RECEIVED	69.93
CARRIED FORWARD AT 31.12.1990	£1371.56

Notes to Accounts

1. The Society had the following stocks of books at 31st December 1990 (1989 stocks in brackets):- 40 *Hardy Ferns* (49), 250 *Guide to Hardy Ferns* (47), 216 *Fern Names and Their Meanings* (271).

2. Interest arises on 30th April on the Greenfield and Centenary Funds. No provision has been made for accrued interest.

3. For the convenience of the officers concerned and the Treasurer, certain officers are issued with advances of expenses. The balances outstanding at 31 Dec. were small and have not been adjusted in the accounts.

4. The accounts reflect the subscriptions actually received in the year. Approximately £1500 is subscriptions received in advance for 1991 but some subscriptions remain outstanding for 1990.

RETIRING PRESIDENT'S ADDRESS

(This followed the 1991 AGM at the Heaves Hotel, near Kendal, Cumbria)

WELSH PTERIDOLOGY

B A Thomas

Welsh pteridophytes have been studied for approximately 400 years. Before then there were occasional references to pteridophytes in the literature but these were in herbals and accompanied by poor descriptions and no distributional data. The first recorded information on pteridophyte distribution was given in a Welsh manuscript herbal written by William Salusbury (1520-*c.*1584). Salusbury, who is perhaps more remembered for his translation of the Bible from Latin into Welsh and has been recently commemorated on a British stamp, lived for many years at Lleweni, Denbighshire. His manuscript gave localities of many pteridophytes: e.g. hart's tongue - grew at Talacre in Flintshire and in wooded glens near Llanefydd, Denbighshire. In 1597 John Gerade published what is possibly the most famous English herbal which led to an increased interest in the subject. Sir John Salusbury, a relative of William Salusbury, annotated his copy with recorded sites, e.g. *'Moonwort* (Botrychium lunaria) *in found in Cunnygnee of the Rt. Worthy Sir J.S. Knight between Botuarry and Carewis; and nere Denbigh'*.

In the 17th Century there started to appear a number of important publications, as organised plant hunting expeditions started to be made into Wales. In July 1639, Thomas Johnson, who edited the second edition of Gerade, set out with companions and an interpreter, Thomas Morgan, on the most ambitious search yet for plants and in the course of his travels toured North Wales. His 1641 published account of this visit recorded details of the places where he had found the plants. For example hart's tongue was found in a cave (now called Cefn-yr-ogo) near Holiwell in Flintshire (Clwyd).

But the turning point in plant hunting came in 1658 when the Cambridge botanist, John Ray, toured Wales. He was interested in plants for a variety of reasons and not just for their potential medicinal values. Ray recorded *Lycopdium (Diphasiastrum) alpinum* and *Selaginella selaginoides* on Cader Idris and four years later visited Snowdon where he found the parsley fern - *Cryptogramma crispa*. But before I continue it is important to put these early visits into geographical and historical contexts. Wales was largely an unknown country with few roads and populated by Welsh speakers. Travelling to Snowdonia needed planning and plenty of time. Thomas Johnson died fighting for King Charles in 1644 and Ray mentioned hearing of Oliver Cromwell's death when he was leaving Wales after his first expedition. Ray did not visit Wales again after 1662 and the Welsh additions to his published works in 1688 and 1690 *(Synopsis Stirpium Britannicarum)* were nearly all made by other people. It was, for example, Richard Kayse of Bristol who, in 1668, found *Polypodium cambricum* recorded by Ray (1690) *'On a rock in a wood near Dennys Powys Castle* [Dinas Powis Castle, South Glamorgan]'. This is the famous var. *cambricum* which was thought to have been collected out of existence in 1876 by a dealer who sold hundreds at one shilling (five pence) each. Fortunately a small colony still survives.

Another more important contributor to Ray's records was the young Welshman, Edward Llwyd. He was reputedly born in Cardiganshire in 1660 and, in becoming Keeper of the Ashmolean Museum at Oxford, became the most influential Welsh botanist for many years. Llwyd made several collecting trips throughout Britain and naturally returned to Wales. In his expedition to Snowdonia he was accompanied by another well-known botanist, Dr Richard Richardson. Although no detailed account of their journey is known, Richardson annotated a copy of Ray's *Synopsis* with habitat details, recording for example

Polystichum lonchitis on Snowdon, near Crib Goch. Later, Llwyd, in a letter to Richardson, described finding *Adiantum capillus-veneris 'growing very plentifully out of a marly incrustation both at Barry Island and Parth Kirig* [Porthkerry] *in Glamorganshire and out of no other matter'* - it is still there. Richardson went on to become an authority on plant localities and in letters to other visitors gave accurate details of where to find many species, e.g. *'In ffynnon-frech* [Llyn Bach on Snowdon] *you will find* Isoetes lacustris'. By this means the German botanist Dillenius, together with an independent collector called Samuel Brewer, recorded *Selaginella selaginoides, Lycopodium (Huperzia) selago* and *Cryptogramma crispa* on Cader Idris, *Isoetes lacustris, Lycopodium (Huperzia) selago, Lycopodium (Diphasiastrum) alpinum, Selaginella selaginoides* and *Cryptogramma crispa* on Snowdon and *Isoetes lacustris, Lycopodium annotinum* and *Pilularia globulifera* on the Glyders. Brewer must have liked North Wales for he stayed there for 12 months and during this period visited a great many sites. He climbed to the summit of Snowdon 13 times and the Glyders seven times, recording many of the plants that he saw. For example, it was in Cwmglas-mawr on Snowdon that he found *Woodsia alpina* for the first time. As a result of so many botanists and plant-hunting expeditions being attracted to Snowdonia the local flora was becoming well-known. In fact, the great majority of mountain-plant discoveries in the British Isles were being made in Wales. By the mid 1700s 35 species of pteridophytes had been recorded from Wales.

Sir Joseph Banks and his friend the Rev. John Lightfoot made the last of the historic plant hunting expeditions into Wales in 1773, attempting to follow Ray's journey in reverse. During the early part of this trip in South Wales they visited Porthkerry to see the maidenhair fern and recorded the royal fern at *'a marshy Lake, extending a mile in length, called Coars Crym Lyn* [Crumlin Bog near Swansea]'.

The published accounts of these early botanists, together with books on many other Welsh subjects, fired the imagination of the English well-to-do and the 'Welsh Tour' became very fashionable in the 18th century. These early 'tourists' employed local people as guides just as the plant hunters had done before them. This practice of hiring guides continued into the 19th century especially with the greater influx of people coming to the area after the completion of the Chester to Holyhead railway in 1849. The guides often had a good knowledge of the mountain flora but unfortunately many of them contributed to the destruction of the fern flora by over-collectiong to supply the large market created by the victorian 'fern craze'. They often competed to lead people to the best sites and collected many plants for sale. As David Allen has mentioned in his book, Snowdon guides used to hawk around holly fern at six pence (2.5p) a root on the very summit itself. Perhaps it is just as well that the Snowdon Mountain railway to the summit did not open until 1896. Fortunately, not all the guides were enthusiastic collectors and some were concerned with saving plants. William Williams (1832-1861), who worked at the Victoria Hotel in Llanberis, was in constant demand as a botanical guide. He is known to have hidden and transplanted plants that he thought were too exposed to the public gaze. It is not known if he did this for true conservation reasons or to hide the plants from other guides to make himself appear more knowledgeable. It is, however, known that he fell to his death on Snowdon while collecting ferns for a client.

Evan Roberts is perhaps one of the last great amateur plant hunters and guides, who at 48 became the Warden of the first National Nature Reserve in Wales at Cwm Idwal and retired as Head Warden in Snowdonia. Evan Roberts led many parties on the mountains and it was he who first showed me holly fern on the Snowdon slopes in the very same area that Llwyd had found it in the late 17th century.

The Victorian fern craze resulted in a great number of books being published on all aspects of the subject. Although several touched upon species and variety distribution in Wales, the only true book on Welsh pteridophytes was *Ferns of Wales* by Edward Young of Waincyrch, Neath, West Glamorgan which was published in 1856. This was an album of pressed specimens, but unlike the other specimen books had printed descriptions of the 34 species together with details of habitats, varieties and methods of culture.

The next phase of pteridophyte hunting in Wales was caught up in the desire to record the distribution of plants. Although very little work was done on plant distribution during the first part of the 19th century, Botanist's Guides such as those of H C Watson (1804-1881), L W Dillwyn (1778-1855) and R Falconer (1816-1881) were starting to appear. With Watson's division of Britain into numbered vice-counties (the Welsh vice-counties are numbered 35, 41-52 and almost equate to the original 13 administrative counties) came the desire to produce county floras. J E Griffiths' *The Flora of Anglesey and Carnarvonshire* which appeared in 1887 was the first to appear since H Davies' *Welsh Botanology* (of v.c. 52) was published in 1813. This led on eventually to even more detailed mapping by quadrats and the publication of the *Atlas of the British Flora* edited by F H Perring and S M Walters in 1962 and the *Atlas of Ferns of the British Isles* edited by A C Jermy, H R Arnold, L Farrell and F H Perring for the Botanical Society of the British Isles and the British Pteridological Society in 1978. In Wales there have been several relatively recent county lists (Merionethshire, Carmarthenshire, Pembrokeshire, Montgomeryshire and Anglesey) and a county flora of Monmouthshire. The county floras of Glamorgan and Flint should appear soon and those of Radnorshire and Montgomeryshire are well advanced.

The British Pteridological Society has, of course, visited Wales on many occasions, although its first visit was not until 1922 when the annual meeting was based at the Padarn Villa Hotel in Llanberis in Snowdonia. The published account records the species seen but says that no variety worthy of being perpetuated or collected was found. It is also interesting to note that the secretary did not record having seen the holly fern which is a species that most previous visitors made a point of seeing. This visit was later than planned, for the original meeting scheduled for 1915 had been cancelled because of the war. Continuing difficulties also meant that the President (Dr F W Stansfield) and Secretary (W B Cranfield) visited North Wales alone in 1919 rather than attempting to lead a Society meeting. It was 1927 before the Society visited Wales again with the members staying at the Peerless Hotel in Tenby, Dyfed. The published account reveals that the party this time did find some worthwhile varieties on the nearby Carboniferous limestone. Since then the number of meetings venturing into Wales has increased, especially with the more varied programmes that have been organised in more recent years.

The few public fern collections in Wales have been limited to University and local authority gardens. Outstanding private collections have been noticeably absent as well, with three notable exceptions: there was E J Lowe's at Shirenewton Hall in Shirenewton, Gwent where he came to live in 1880 because *'the neighbourhood of Nottingham was singularly deficient in ferns'*; the very large collections of F G Wynn in Caernarvonshire which were described by Stansfield in 1925; today there is Christopher Fraser-Jenkins' collection, with its National Collection of *Dryopteris*, at his father's home at Bridgend, Mid Glamorgan.

Pteridophytes have been an interest of the staff in the Botany Department of the National Museum of Wales for some time, which is evident in the publication of six editions of *Welsh Ferns*. The Keeper, H A Hyde, and Assistant Keeper, A E Wade, wrote the first which was published in 1940 in response to the perceived need for an inexpensive text. Notes were given on the distribution of species in Wales together with lists of specimens in the herbarium. There were few changes in the next two editions although the fourth edition, published in 1962, reflected an increased knowledge of both fern taxonomy and species distribution in Wales. The fifth edition (1969) was largely rewritten by the new Keeper, S G Harrison, to include the clubmosses, quillworts and horsetails and the sixth (1978) gave many more details of hybrids. The seventh edition is now scheduled to appear in time for the 1992 season. Against the background of a new edition of *Welsh Ferns*, Dr George Hutchinson and I have brought the records of the pteridophyte distributions in Wales up-to-date and have compiled a series of maps on a 10km grid square system. These are based on published records, information from county recorders and new records from our own field work and our herbarium which now contains about 4,000 sheets of Welsh pteridophytes. It is intended to include these maps in the new edition although they will first appear in *Watsonia*.

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photo: M Rickard

Royal Horticultural Society stand at the 1991 Chelsea Flower Show

NATIONAL CENTENARY EVENTS 1991

FERNS AT THE CHELSEA FLOWER SHOW - 20-24 May

ROYAL HORTICULTURAL SOCIETY STAND

Peter Barnes

It all started with a chance remark by Ray Waite, Glasshouse Supervisor at Wisley, to Hazel Key (Fibrex Nurseries) in 1989, when Ray mentioned that he was hoping to stage an exhibit of ferns at the Chelsea Flower Show. Hazel mentioned the approaching centenary of our Society and from this spore of an idea emerged the luxuriant greenery that many saw last May, which recognised the happy event of 100 years ago.

Historically, Wisley has not stood high on the scale of public fern collections so the first question was, could we assemble sufficient material to made a good exhibit? As the project matured from an idea to a reality, word got round on the grape-vine (or *Lygodium*?) and plants were assembled at Wisley from various sources. Apart from the garden itself, plants were loaned or given by Robert Bolton, Matt Busby, Ray Coughlin, Jimmy Dyce, Reg Kaye, Hazel Key, Martin Rickard, and RBG Kew (John Woodhams). Most of these reached Wisley in the autumn of 1989 and were potted up and set in a sheltered bay between greenhouses for that winter. In autumn 1990 they were tidied and brought in to a cool greenhouse and here began the tense period of waiting to see how they developed - little concrete advice was available concerning this sort of gentle forcing.

In the meantime, Ray was busy developing his plans for the exhibit. In spite of some indecision by 'the authorities' as to the size of the stand, Ray kept to his original idea of a mossy grotto, a few birch saplings and a small tree-fern to provide some variation in height. The ferns co-operated well and there was material to spare by the Saturday before the show opened, when Ray and his team from Wisley, together with John Woodhams, commenced planting.

The grotto intrigued many visitors. The basic structure was formed with wooden pallets whose angular outline was rounded off with 'moss sandwiches' - two layers of chicken netting with moss in between. Once the shape was right, more moss was tucked in. The ferns, all in containers, were planted in, around and over the grotto, a small pool installed and the whole stand dressed with a layer of dry leaves, collected for the purpose.

In spite of the input from other sources, the exhibit was an RHS one and so could not be judged. (Had it been judged, we were later told that it had been considered worthy of a Gold Medal.)

I was lucky enough (I think!) to be manning the exhibit for each of the four days of the show and so saw the reactions and heard the comments of many people. The degree of interest surprised me and I am sure it was not just from BPS members. People who stopped to talk invariably had particular questions and either grew ferns already or were keen to do so. Occasionally, I overheard *'it's only ferns dear, ooh look ...'* as the rather gaudy stand next door of pelargoniums and fuchsias came into sight. One lady actually stopped to tell me *'you'll think I'm awful, but I've just dug out all the ferns in my garden'* - what can you say to that? Others were more appreciative in their comments: *'this is balm to my eyes after all that colour'*. The recent, well-publicised reports of research linking bracken spores with higher cancer incidence also prompted a few, unanswerable questions.

Throughout the week, BPS members came and helped man the exhibit as well as the Society's own stand in the Scientific and Educational Section. Their assistance was greatly appreciated - particularly those who stayed late into Friday evening to help Ray and his colleagues dismantle the exhibit. The last word with Ray: *'If only all stands were so straightforward to stage ... '.*

BPS STAND

Robert Johns

The BPS mounted an exhibit in the Scientific and Educational Section of the Chelsea Flower Show, centered on the excellent series of posters prepared for the Centenary of the Society by the National Museum of Wales under the direction of Dr Barry Thomas. The poster display was mounted on panels which were placed on a three foot high continuous table around three sides of the quadrangle allocated. A small display of ferns, made up mostly of common species in cultivation such as *Nephrolepis* and *Pteris*, were used to complement the posters. A small plant of *Elaphoglossum crinitum*, previously a common house plant but now seldom grown, attracted interest. Many of the visitors to Chelsea examined the stand, some in a brief and superficial manner, but a sufficient number showed interest in the Society and its objectives to justify the exhibit.

Preparation began at Kew several weeks before the Chelsea Show. Apart from contacting members of the Society to help man the stand, it was also necessary to arrange for display boards and plants. Fortunately the Royal Botanic Gardens at Kew were not using their display boards and generously arranged to get them re-covered for the Chelsea Show. We must express our sincere thanks to the Information and Exhibition section at Kew for their assistance and to John Woodhams for providing the ferns used in the display. The poster set used was also kindly lent by Kew. Because of the quality of the exhibition boards the erection of the exhibit went surprisingly quickly. Peter Edwards and Simon Malcomber helped on a busy Sunday morning before the show, to put up the display. It was not until after the display was 'finished' that we were told that it was competitive and some reorganisation was necessary. The collection of ferns was completely restaged and, using a bag of sphagnum kindly donated from a neighbouring stand, it was possible to cover the pots and make the display more attractive and competitive.

Monday was a day of watering and adding the final touches to the display before judging. In the evening Josephine Camus looked after the stand during the official tour and inspection by Royalty. During the week from Tuesday to Friday, a number of members of the Society manned the display, also taking the opportunity to examine the other exhibits at the show. A busy programme included helping visitors to Chelsea with questions on the Society and growing ferns, selling the Society's books, cultivation notes on ferns and other Society goods to the public. Considerable time was spent by our fern growers advising the public on problems they have with their fern plants.

On Friday evening the show closed at 5pm and then the stand had to be dismantled and transported back to Kew. Although packed and ready for loading at 6pm we had to wait until 10pm before it was possible to load the vehicle. This meant carrying all the display materials, including plants and panels, about quarter of a mile to the vehicle. Unfortunately all coffee sales etc., seemed to finish at 6pm so the last four hours were a most frustrating wait! Back at Kew it was necessary to unload the vehicle so that the panels did not get damaged. Again Simon Malcomber and Peter Edwards helped in this work. Many thanks to all those members of the society who helped during the week for their excellent support.

The award of a Silver Medal was appreciated and reflected the work put into the stand, but the greatest reward was the interest of the public in the display and the large numbers that expressed interest in the Society and membership.

HELPING AT THE CHELSEA FLOWER SHOW

Margaret Nimmo-Smith

I spent two days at the show and thoroughly enjoyed myself helping on both the Society stand in the scientific section and the RHS stand in the centre of the marquee. In fact I spent more time on the RHS stand where it had been thought that more technical questions on ferns would be asked. But luckily for me, the reverse situation occurred so that I was kept busy directing people to the Farmers' Union Stand, or explaining that, yes, there was a greater diversity in ferns than the ordinary person realised, and that all the ferns on the stand were hardy apart from the *Dicksonia antarctica*. If the person seemed really keen the plant list was thrust into their hand, and directions were given towards the Fibrex Nursery stand for ordering plants and to the Society stand for more detailed information on publications and how to join. Diverse subjects were covered in conversation, from which ferns to plant in dry shade or on alkaline soils, to learning about a fernery which is being restored on Jersey, and a question about creating a moss garden. On the Society stand the most frequently asked question seemed to be how to eradicate horsetails from unwanted places!

On Friday, the last day of the show, there is always a terrible scrum at 5pm when the show closes and the public are allowed to buy plants. The BPS helpers were posted all around the Wisley stand to make sure that none of the ferns were sold or otherwise disappeared. Quite a task as many hopeful people appeared and had to be sent away. We then helped to dismantle the stand which, with loading the van, only took a couple of hours, a tiny fraction of the time it had taken Ray Waite and his team of workers to construct it. I savoured a moment of power when I was allowed to remove the first inverted flower pot, part of the retaining bank, to let the water in the pond drain away! Refreshments were shared around - it is probably not realised that the RHS services such as catering rapidly close down after the show - unfortunate when you are faced with a long wait to get your van in to load up the plants. The ferns were all loaded back into the hire van which belongs to a friend of Ray who has great experience of moving plants and has fitted out his van with specially constructed movable staging. He and Ray were very proud of the fact that all the ferns had arrived at Chelsea in perfect condition, not a frond out of place from the travel. The loading was hard work as many of the larger pots were extremely heavy. I departed at 9.15pm in a rush to catch a train, and I think they left fairly soon after but had the long drive back to Wisley.

A big thank you to the Wisley team for all their hard work in planning the exhibit, nurturing the plants, constructing the stand, watering it and finally dismantling it. I am sure that magnificent display has persuaded many more gardeners to try growing ferns and has recruited new members to the Society.

SYMPOSIUM ON CULTIVATION AND PROPAGATION OF PTERIDOPHYTES

7-11 July **Graham Ackers**

This symposium was a significant contribution to our centenary programme, and a unique contribution to our understanding of the world of pteridophyte cultivation. Around 90 delegates attended from several European countries, South Africa, Madagascar, Australia, Mexico and Singapore, with a particularly strong representation from the USA. For three days, proceedings were held in a good lecture theatre at Imperial College. On the Wednesday, we were based at The Royal Botanic Gardens, Kew. The inaugural reception on Sunday evening was a most enjoyable occasion. On such a fine, warm evening, Chelsea Physic Garden proved a charming setting for participants to become acquainted and for reunions with old friends.

As far as possible, the sessions were arranged thematically. Monday morning was devoted to 'Early pteridologists and fern culture'. Eminent botanist and historian William Stearn was scheduled to start the proceedings with a talk entitled 'Pteridologists in the early days of botanic gardens'. However, Professor Stearn pointed out that such a talk would have taken only several seconds to give, as there weren't any! Instead he gave a fascinating and authoritative account of botanic gardens through the ages. Charles Nelson then spoke on 'Ferns in Ireland: cultivated and wild through the ages'. Finally in this session, John Mickel of the New York Botanical Garden, and author of the well loved *How to Know the Ferns and Fern Allies*, talked on 'Ferns in cultivation in America'. The talk was illustrated with excellent colour slides, many taken in his own garden. With his love of ferns, John Mickel demonstrated an enviable synchronisation of profession and hobby!

photo: M Ladell

Centenary Symposium reception at Chelsea Physic Garden
Sue Olsen, Bernard Mitchell, Alison Paul, Barry Thomas, Primrose Peacock, Jennifer Ide, Clive Jermy, Matt Busby, Graham Hoare, Nick Schroder, Katherine Berger

Monday afternoon's theme was 'Ferns in cultivation: the potential in the wild'. John Burrows gave the first presentation, 'Southern African ferns of horticultural potential', taking us on a tour of the different botanic regions in South Africa. For each region, John described the ferns with horticultural potential, and the likely conditions under which they could be grown. Out of the many species described, he gave his own three personal favourites as *Pellaea doniana, Asplenium hypomelas,* and *Polystichum alticola,* so over to the spore exchange scheme! John and his wife Susan co-authored the recently published magnificent *Southern African Ferns and Fern Allies,* and Susan had on display, and for sale, originals of some of the fine illustrations from the book. The next talk, from Bob Johns, was 'Montane and subalpine ferns of Malesia: a potential source of cultivated plants'. Once again, the major vegetative zones, and their plants, were described. Topics such as collection, export regulations, propagation and cultivation were discussed, although there was little hope of any ferns being hardy in the British Isles! In the first of two presentations, Judith Jones, well known horticulturalist from Seattle, talked on 'The commercial garden potential for North American temperate ferns'. This was a fascinating account of various factors such as fashion, availability, publicity, and aesthetics which dictate the commercial potential of fern species. Finally, author of the 'bible' of fern cultivation (*Fern Growers Manual*), Barbara Joe Hoshizaki, talked on 'The potential for new fern introductions'. Here, concentrating on indoor ferns, further market criteria for fern sales were described. These included symmetry, small to medium size, dense foliage, and something unusual in shape, texture, colour or pattern, and ease of growth.

Tuesday morning was set aside for 'Genetics and fern breeding', and proved to be something of a revelation for some horticulturists present, who could not wait to get home and try out new ideas suggested by these presentations! Indeed the first talk by Christopher Haufler 'Developing fern breeding programmes: insights from genetic studies' explained how self-fertilisation of gametophytes is probably far less common than had been supposed. Thus, if outcrossing is the norm, and the hormonal control of gametophyte sexuality is also possible, then the breeder can view the gametophyte as presenting many possibilities for manipulation. The talk that followed was by Elizabeth Sheffield on ' Apogamy and apospory: their potential uses in breeding and propagation'. Apogamous gametophytes produce male gametes that can be used for fertilising females of other species. By fragmenting them, they can also provide much material for the production of sporophytes identical to their parent. Induced apospory can be invaluable for breeding programmes aimed at the production of polyploidal offspring. In 'The genus *Pteris,* its breeding systems and its horticultural potential', Trevor Walker gave an overview of his researches into this important genus. Reviewed were the diversity of the species, apogamous and hybridising behaviours, and the possibilities they presented. 'A tale of two genomes: dynamics of the genepools of polyploid ferns' was the rather daunting title of Charles Werth's talk. As someone who only learnt what a spore was last year, this one went way over my head – you will just have to await the symposium proceedings! The final talk of the morning was by Eric Rabe on 'Using a spontaneous mutation in *Adiantum* to test hypotheses about polypoid ferns'. The fern in question was one of an otherwise normal population of *Adiantum pedatum.* The investigation suggested that the phenomenon of 'hybrid vigour' may result more from the actual hybrid origin itself, rather than from accompanying polyploidy.

The thematic approach to the symposium sessions was temporarily suspended on Tuesday afternoon, when we had two unrelated talks and a poster session. Martin Rickard started proceedings with 'Variation in the *Polypodium vulgare* group', in which he attempted

photo: courtesy RBG, Kew

Centenary International Symposium on Cultivation & Propagation of Pteridophytes (Key to participants will be published in Symposium Proceedings) to reconcile varieties currently in existence with their original names. With his own comprehensive garden collection displayed on slides, Martin was in an ideal position to attempt an unravelling of such mysteries! We were then allowed an hour and a half to view the posters. There were about a dozen fine displays, with more than enough interest to sustain us over the allotted period. Visually, the most memorable was a superb collection of ant fern (*Lecanopteris* spp.) paintings staged by Nederlandse Varenvereniging, the Dutch Fern Society. These were painted by Luuk Jaarsma for a proposed book on the genus by Prof. E Hennipman and his team. And of course, BPS sales conducted some brisk business! To complete the day, Judith Jones gave the second of her presentations, on 'Landscaping with international ferns: a professional approach'. This was a cleverly conceived dual projector presentation, where the criteria for selection, and the uses of commercially viable ferns were described. One of my lasting memories of this symposium is the image of Judith doing a juggling act with the two projectors without being able to see both screens, sometimes getting the images out of synchronisation as a result, and admitting uncertainty over telling her left from her right! Hilarious stuff!

On Wednesday, we moved to Kew Gardens, where the morning lectures were held in the Jodrell Lecture Theatre. In his talk 'The fern industry in Holland', Wim Oudshoorn described the impressive commercial fern growing operation of Lemkes. The second presentation was 'Leather-leaf fern culture in the USA' by Robert Stamp. The fern in question, *Rumohra adiantiformis* is widely used in cut flower arrangements, and the problems and opportunities accompanying its culture in Florida were described. Gillian Douglas then spoke on 'The investigation of existing and novel artificial growth systems for the production of fern gametophytes'. Soil is too unpredictable as a growth medium for laboratory experimental work. Various alternatives were described, one of which included the use of a fiendish looking machine called an 'air lift fermenter'! Finally for the morning, John Woodhams gave a brief historial account entitled 'Fern growing at Kew: an introduction', to which Clive Jermy appended some amusing anecdotes about Kew's renowned grower, the late Bert Bruty.

The afternoon was set aside for visits to relevant Kew facilities, and included a good chunk of free time for exploration of the gardens. Immediately after lunch, and following some impressive organisation logistics by Clive Jermy, we split into three groups to visit the Micropropagation Unit, the Filmy Fern House, and the fern nurseries, guided by Matthew Ford, Nigel Rothwell and Peter Bradley respectively. Later in the day, the conducted tour by Peter Bradley of the always entrancing fern displays in the Princess of Wales Conservatory was enhanced by refreshments in the form of a choice selection of wines and cheeses. This finale to the day was staged by Bob Johns with help from Peter Edwards. Bob gave an unscheduled demonstration of the art of preparing a fresh pineapple for consumption that gave rise to much ribald speculation on his employment in the tropics before he joined the staff at Kew. As a non professional, I always feel 'privileged' seeing behind the scenes on such occasions, and expert commentary from the Kew staff made these visits particularly pleasurable. And the sun shone all day too!

We returned to Imperial College for Thursday's proceedings, where the theme for the morning was 'Fern growing and the gardener'. Author David Allen gave the first talk 'The Victorian fern craze - Pteridomania revisited', being a fascinating postscript to his well known book. Nigel Hall continued the historical theme with 'Nineteenth century nurserymen', intending to give an account of both the Stansfields and the Birkenheads, two families of fern nurserymen. However, Nigel's research into his subject had been so thorough, and his account of the Stansfields was so absorbing, that the Birkenheads hardly got a look in in the time available! In 'Experimental hybridizing and hybridizers', Mary Gibby described early attempts to produce hybrids, culminating in the work of Professor Irene Manton during the years 1950-75. Peter Boyd, who is curator of the Museum of North Devon in Barnstaple gave the next presentation on '150 Years of ferns and fern culture in Devon: a case study'. Historically, Devon was identified as a centre of interest in fern books, in the varieties occurring in the county, and in the nurseries who traded. The museum is planning a Victorian-style conservatory fernery, which should be a great attraction once completed. The final talk of the morning was given by Clive Jermy on 'Problems with nomenclature and typification of fern cultivars'. Here, the problems of reconciling old cultivar names with the requirements of the *International Code of Nomenclature for Cultivated Plants* were discussed.

After lunch, the theme became 'Fern cultivation and conservation'. The first talk, 'The role of botanic gardens in cultivation' was by Etelka Leadley, who explained the importance of botanic gardens in the conservation of biodiversity and conservation education. Her own organisation, the Botanic Gardens Conservation Secretariat, is the only global organisation primarily concerned with wild plant conservation. In the second talk of this session, 'The culture of cheilanthoid ferns in the Botanic Garden at Lyon', Paul Berthet described the successes and problems (but mostly successes!) experienced with this difficult group of ferns. The next presentation was 'National plant collections: ex situ conservation' by Graham Pattison of the National Council for the Conservation of Plants and Gardens (NCCPG), in which the history and present status of this organisation and the plant collections were described. Ferns represent 5% of the collections, including about 1000 taxa. A discussion on further fern collections for possible inclusion followed the talk. The final talk of the session (and the symposium) was by Chris Page on 'Conservation of wild species: the ex situ approach'. Whilst the cessation of destruction of fern habitats had to be the top priority, the establishment of spore banks and living collections in the UK would act as a backstop against potential wild species loss. This interesting presentation stimulated considerable discussion, some of which focused on the potential difficulties of ultimate re-introduction into habitats changed from their original states. The formal proceedings of the symposium were then brought to a close by Clive Jermy, who linked the session themes together in an informed, objective, and yet personalised summary.

On Thursday evening, we relaxed at the most enjoyable symposium dinner. In his humorous after dinner speech Barry Thomas related the many unsuccessful attempts to change our name to 'The British Fern Society' from 'The British Pteridological Society'. However, as the latter name had always won through, Barry wondered whether some of our members, also members of 'The American Fern Society' should now propose its name be change to 'The Ex Colonial Pteridological Society'! Jimmy Dyce then gave a jaunty potted history of the Society, during which some whispered translations were supplied to some of our colleagues from overseas!

The organisational tasks for the symposium must have been numerous, time consuming, and frequently frustrating. However, such activities were largely hidden from the delegates, who were undistracted from their enjoyment of the proceedings. For such organisational excellence, we are greatly indebted to the organising committee and all others who helped behind the scenes, but in particular, to Jennifer Ide and Clive Jermy. Thank you for a superb symposium.

CENTENARY GARDEN TOUR – 12-14 July

Martin Rickard

Friday 12th July – The garden tour had been two years in planning and on the first morning my worst fear materialised, the bus did not turn up on time! Apparently the packed lunches had not been prepared on schedule! Fortunately the trauma was quite short-lived with the coach arriving 20 or so minutes late – 20 long minutes! Slightly behind schedule the party set off from London along the newly opened M40 for the two hour journey to Bromsgrove. The initial delay was quickly forgotten as coffees were served en route by Jennifer Ide and Rosemary Hibbs and delegates quickly got to know each other.

We arrived at 17 Alvechurch Highway, Bromsgrove to be warmly welcomed by Ray and Rita Coughlin and a large number of local West Midlands members of the Society – present on this occasion to act as guides in the garden and of course to take advantage of the opportunity to meet some of our overseas members. Together with Ray and Rita they also kindly provided us with a marvellous array of welcome refreshments. The party were delighted by the beauty of the garden here and of course by the tremendous range of ferns. Ray and Rita have probably been the most successful raisers of new fern varieties over the last 20 or so years in Britain. Evidence of their successes fill the garden right from the house through the limestone rock garden, acid garden, raised beds, greenhouses, pergolas, wet garden, woodland garden etc. for 100 yards or so up the gentle slope, even overflowing into the garden of their next-door neighbour, Betty Thomas! A very comprehensive range of British fern varieties is grown and a good many overseas species and varieties feature strongly. Plumose lady ferns abound as do just about every conceivable form of *Polystichum setiferum* including 'Divisilobum', 'Multilobum', 'Plumosum', 'Foliosum' and 'Cristatum'. Not only are many of the plants very rare or even unique but all are expertly grown. This was a wonderful site for the start of our tour, my only fear was that we had set a standard difficult to repeat over the next three days! Many thanks again to you all for such an enjoyable scene-setter.

Our second stop was another two or three hours further north, at historic Sizergh Castle, just south of Kendal. Here we were met by Malcolm Hutcheson, the Head Gardener, who kindly gave our party an introductory account of the garden and guided us around the famous limestone rockery, before showing us some of the treasures in the reserve collection. We were shown representatives of the four NCCPG National Collections of ferns held at Sizergh. Plants from each were scattered around the garden in positions likely to suit each fern while at the same time having the correct aesthetic appeal. This is not exclusively a fern garden. Conifers and flowering plants feature strongly but the ferns take a more prominent role than in any other public garden I know in Britain. The most notable ferns here are the royal ferns. A fine specimen usually considered *Osmunda gracilis* was the subject of much discussion; it closely resembled plants grown in the USA as *Osmunda regalis* var. *spectabilis*. No final decision was taken on its true identity. The crested forms of *Osmunda regalis* also attracted a lot of attention. In the reserve collection there was also much of interest with one or two plants finding new homes. Most generously Malcolm allowed unrestricted collection of spores. All too soon it was time to move on to our overnight stop at The Post House, Lancaster. Here we were very quickly installed in our rooms and in no time at all sat down to dinner. A highlight of the evening was the appearance of our guest of honour, Reginald Kaye. No speeches of course during an informal evening but plenty of opportunity for Reg to meet old and new friends in preparation for the next day. Unfortunately, Malcolm Hutcheson had been unable to join us for dinner.

Saturday 13th July – After the fine weather of the Friday, Saturday was miserable and by the time we met up with Reg Kaye again, at his nursery in Silverdale, it was lashing with rain. Despite the water dribbling down our necks the garden was thoroughly explored, ably shown round by Reg in his 90th year – he was without a hat yet the rain seemed to affect him less than anyone! An account of the ferns here in a few words is impossible but it was a pleasure for the party to see many of the classic 'antique' varieties preserved in Reg's garden. Notable examples which I remember are *Athyrium filix-femina* 'Clarissima Jones' and 'Clarissima Bolton', 'Victoriae' original clone, *Asplenium scolopendrium* 'Drummondiae', *Asplenium trichomanes* (Incisum group) 'Greenfield' and *Polystichum setiferum* 'Plumosum Drueryi'. Also well represented are newer varieties such as *Polystichum munitum* (Cristatum group), with a lot of rarely seen species from many parts of the world, for example *Asplenium fissum* (Southern Europe), *Blechnum minus* (New Zealand) and *Blechnum niponicum* (Japan). It is thanks to a few members like Reg with links back to pre-war days, that so many fern varieties and species are still in cultivation. Many thanks to Reg for enduring the awful weather and making our visit to the home of British fern growing for the last 50 years or so so memorable.

Wet and bedraggled we were all too soon back on the coach, admittedly glad to get a chance to dry out! We now had the prospect of a three hour trip back south to Fibrex Nurseries at Pebworth. Time was filled by eating lunches which were far too big(!), watching the Schering Agriculture/National Museum of Wales sponsored Fern Video and talking – a lot of talking! To me this chance to become acquainted with other 'fernys' was one of the highlights of the tour, invariably we arrived at the next venue much too early for my liking!

As we drove south the rain stopped (ample proof of the benefits of growing ferns in the north-west!) and against all the odds we arrived at Pebworth within a few minutes of our ETA. We were immediately ushered into the village hall to be present for the prize giving for the Centenary show organised for the Society by Fibrex Nurseries. What a sight greeted us! I have never seen so many ferns in such a small space, all were magnificently grown specimens, and very many were examples of rarely seen taxa. In total I am reliably informed by Edith Kamermans that there were over 250 plants exhibited in the various classes! In addition, Clive Brotherton had set up a fabulous display of just some of his *Cheilanthes* and *Pellaea* plants and other xerophytic ferns. The whole show was surely the most comprehensive display of ferns set up in the UK this century and how pleasing it was to be able to organise this to tie in with the visit of the Centenary Garden Tour.

The Centenary Show was not the only attraction at Pebworth of course. The impressive stock of ferns grown by Fibrex Nurseries had to be investigated, indeed some of our party found it difficult to contain their impatience while the Fern Show prizes were being awarded! Needless to say many plants left Pebworth that day but many more stock plants, not available for sale, were admired in the numerous greenhouses and tunnels. Dare I say that some of our number were seen inspecting *Pelargonium* (NCCPG National Collection) and ivies – shame on them! To round off a most memorable visit, Hazel Key and her family invited all the Tour members to tea in their home where a superb cake was cut, even though beautifully iced in celebration of the BPS centenary. It seemed such a shame to have to slice through the realistic fern fronds.

That evening, slightly late as usual, the party arrived at The Moat House Hotel, Stourport, Worcestershire. Here we enjoyed an excellent dinner with two guests, Matt Busby and

photo: A Leonard

John Mickel and Martin Rickard at Leinthall Starkes during Centenary Garden Tour

my wife Hazel; unfortunately Hazel Key, and Ray and Rita Coughlin were unable to join us. During dinner Barbara Joe Hoshizaki proposed a vote of thanks to me for organising the tour, a gesture I very much appreciated.

Sunday 14th July – The next morning it was the turn of my wife and I to be hosts at our home at Leinthall Starkes. We were very ably supported by the West Midlands members who had been present at Ray and Rita's on the first morning; these marvellous people got down to the job of organising refreshments while my wife was showing people her nursery stock and I was indulging myself in the garden! The group wandered about unguided in beautiful sunny weather with the view from the summerhouse at the top of our hill looking its best. Of the ferns I think the hardy exotic species attracted most attention. Certainly I remember Barbara Joe and her husband Takashi spending a long time pouring over *Peranema cyatheoides*, while I was busy trying to glean names for Mexican material collected by Christopher Fraser-Jenkins from John Mickel and Monica Palacios-Rios. Apparently some species actually grow bigger in Herefordshire than in Mexico, e.g. *Phanerophlebia pumila*! I was disappointed that most polypods were not in leaf, also I was sad that some of my cyatheoid tree-ferns had succumbed to the previous winter. Fortunately *Dicksonia antarctica* was in fine fettle. I was pleased to have the opportunity to show visitors the sections of the garden containing ferns from Jimmy Dyce's collection as well as many from Robert Bolton, Jean and Jack Healey and Philip Coke among many others. By this time two of our number unfortunately had to leave us, Miranda Innes and Coral Lindbeck, but everyone else was captured for posterity in the group photograph except for Edith Kamermans, Patricia Sellars and Susan Yamins who could not be whipped in in time!

We left Leinthall Starkes late as usual, but fortunately we made up some time on the journey back east to the Savill Garden near London where we were greeted by a very understanding John Bond, Keeper of the Garden. In the remaining time at his disposal John first of all outlined the history of the garden and its royal connections before taking us on a tour of the ferny highlights. This garden is not a fern garden. It is a beautiful woodland garden full of rhododendrons, azaleas, magnolias etc. as well as the most wonderful range of herbaceous woodland plants. Ferns are planted very effectively to enhance the overall plan. Ferns of special note seen included the most remarkable bank of *Polystichum setiferum* 'Plumosum Bevis' – three feet or more high and fully fifteen metres from end to end, *Dryopteris erythrosora* in quantity, a clump of *Osmunda* which stimulated much discussion, as well as very rare *Dryopteris* species and hybrids collected by Christopher Fraser-Jenkins. Wherever possible ferns here are planted in groups of ten plants or more, making stunning eye catchers throughout the gardens. Once again members of our party were allowed to collect spores.

All too soon it was back on to the coach for the last time, and within the hour we were back at Imperial College, disembarked and setting off to our various destinations in all corners of the world.

In conclusion I must say that this tour was one of those experiences of a lifetime that will never be forgotten. The delegates were the most wonderful group of people from ten different countries, each and every one of them was a pleasure to be with. I certainly learnt a great deal and I am sure everyone else was in the same boat. I have always been unenthusiastic about coach trips but now I have changed my mind; there can be few better means of easily getting to know people – especially ferny people!

photo: M Rickard

Centenary Garden Tour party and supporters at Leinthall Starkes, 14 July 1991

Standing: Anthony Pigott, Gunter Winkler, Hazel Rickard, Hildegard Jackson, France Rakotondrainibe-Michel, Bernard Williams, Siew Gek Loh, Mary Williams, Matt Busby, Andrew Leonard, Robert Adams, Peter Boyd, Guy Huntley, Marie Van Etten, Rosie Chan Blackburn, Doreen Brotherton, John Hosford, Dorothy Fortune, Clive Brotherton, Judith Jones, Madame Houitte, Rita Coughlin, Mary Ellen Tonsing, Katherine Berger, Monsieur Houitte, Master Houitte.

Sitting or crouching: Margo Ladell, Harry Olsen, Mobee Weinstein, Sue Olsen, Monica Palacios-Rios, Nancy Swell, Jennifer Ide, Takashi Hoshizaki, Barbara Joe Hoshizaki, Graham Hoare, Nicole Kleinhaus, Rosemary Hibbs, Carol Mickel, Marty Willard, John Mickel, Ray Coughlin.
[Joan Gottlieb, Edith Kamermans, Patricia Sellars and Susan Yamins missed this photocall while Miranda Innes and Coral Lindbeck had to leave the tour early.]

PEBWORTH FERN SHOW - 13 July

A R Busby

A unique event in the Society's Centenary celebrations was the Fern Show held in the village hall at Pebworth near Honeybourne, Warwickshire. This provided an opportunity for members of the Society to display competitively the best plants from their fern collections. Knowing the average member's reluctance to show ferns, I was somewhat sceptical that there would be sufficient exhibitors, and indeed there were moments when it appeared that insufficient members would apply to make the show a viable proposition. In the event, twelve exhibitors filled Pebworth Village Hall with nearly 200 ferns. The hall was just big enough to accommodate all the entries and it proved to be a rare spectacle and a real eye-opener for the general public.

The show was judged by Mr Stuart Williams and the prizes were presented by the President, Dr Barry Thomas. The prize-winners are listed below.

Class 1	Six Hardy British Ferns: 1st D J Kershaw, 2nd R F Cartwright, 3rd M H Rickard
Class 2	Six Greenhouse Ferns: 1st D J Kershaw, 2nd R J Smith, 3rd A R Busby
Class 3	Three Hardy British Ferns: 1st R J Smith, 2nd M H Rickard, 3rd D J Kershaw
Class 4	Three Foreign Hardy Ferns: 1st R J Smith, 2nd D J Kershaw, 3rd R Cole
Class 5	Three *Asplenium scolopendrium*: 1st V F Newey, 2nd B Wright, 3rd M H Rickard
Class 6	Three *Polypodium*: 1st M H Rickard (1 entry)
Class 7	Three *Polystichum*: 1st R C Coughlin, 2nd M H Rickard, 3rd R J Smith
Class 8	Three *Athyrium*: 1st B Wright, 2nd R C Coughlin, 3rd M H Rickard
Class 9	Three *Dryopteris*: 1st R C Coughlin, 2nd D J Kershaw, 3rd R J Smith
Class 10	Three *Asplenium* (excluding *A. scolopendrium*): 1st B Wright, 2nd M H Rickard, 3rd R J Smith
Class 11	Three Greenhouse Ferns: 1st R J Smith, 2nd D J Kershaw, 3rd M H Rickard
Class 12	One Hardy British Fern: 1st M E Nimmo-Smith, 2nd R E Cole, 3rd R C Coughlin
Class 13	One Greenhouse Fern: 1st A R Busby, 2nd M H Rickard, 3rd R V Coughlin
Class 14	One Foreign Hardy Fern: 1st R C Coughlin, 2nd M H Rickard, 3rd A R Busby
Class 15	One *Asplenium scolopendrium*: 1st V F Newey, 2nd M H Rickard, 3rd A E Hoare
Class 16	One *Polypodium*: 1st M H Rickard, 2nd R J Smith (2 entries)
Class 17	One *Polystichum*: 1st B Wright, 2nd R J Smith, 3rd M H Rickard
Class 18	One *Athyrium*: 1st R C Coughlin, 2nd M H Rickard, 3rd R J Smith
Class 19	One *Dryopteris*: 1st V F Newey, 2nd R J Smith, 3rd D J Kershaw
Class 20	One *Asplenium* (excluding *A. scolopendrium*): 1st R F Cartwright, 2nd R J Smith, 3rd M H Rickard

Other awards were also made and presented: a Medal Card to Alf Hoare for the most interesting fern in the show, an extremely diminutive form of *Asplenium scolopendrium*, no more than an inch or two high; a Medal Card to Ray Coughlin for the best fern in the show which was a superb *Athyrium filix-femina* 'Kalothrix', and a Gold Medal Card to Ray Smith for accumulating the most points overall. In addition, Clive Brotherton put on a non-competitive display of his collection of cheilanthoid ferns which, in the opinion of the judge and show organiser, merited a special award of a Gold Medal Card.

The Warwickshire Group of the National Council for the Conservation of Plants and Gardens provided support with a display of literature and cut flowers from the National

Collection of *Digitalis* and several plants from my National Collection of *Osmunda*. The West Midland Regional Group's stand exhibiting our Society literature and merchandise aroused much interest with the visitors and we gained one or two new members.

The show was organised to coincide with the Pebworth Village Gardens Open Day and Fibrex Nurseries were also open to the public. During the day, the show and nursery were visited by the Society's Centenary Garden Tour, and, after visiting the show and nursery, the party was provided with tea and a specially decorated fern cake to mark the occasion.

The Society wishes to express its warmest thanks to Mrs Hazel Key for the original concept of Pebworth Fern Show and to Fibrex Nurseries Ltd for providing and preparing the venue, to the trustees of the Greenfield Fund for agreeing to provide over £300 in prize money, to Phostrogen Ltd and Wolf Tools for kindly providing additional prizes, to Mr Stuart Williams for judging the show with such consideration and care, to John and Margaret Collins for organising and manning the Society stand, to the Warwickshire NCCPG Group for their willing support, and to all the exhibitors for travelling so far to ensure the show's success and proving me so wrong.

photo: J Collins

Fern Show, Pebworth village hall, Warwickshire

HAMPTON COURT INTERNATIONAL FLOWER SHOW - 11-14 July

A M Paul

The Society was represented at this show by The National Council for the Conservation of Plants and Gardens who mounted a display of ferns '*to celebrate the centenary of the British Pteridological Society and to demonstrate the decorative value of these plants*'. The ferns were loaned from the National Collection of Hardy Ferns held by Mr John Bond at Savill Garden, Egham, Surrey. Many thanks to John Bond, and to Graham Pattison of the NCCPG for publicising ferns and the Society to such a wide audience.

SOUTHPORT FLOWER SHOW - 22-24 August

A R Busby

Although sixteen entries would appear to be a slight increase on 1990 (14) the show bench still appeared to be somewhat short of ferns and it would have appeared even more so had it not been for the introduction this year of a new 'championship' class, class 6, which required the exhibitor to stage two indoor ferns, two foreign hardy ferns and four British ferns. This was designed to test the 'all-round' skills of a fern grower. Fortunately, it also helped to fill the show bench as it attracted three entries. It may prove to be a popular class with its enhanced prize money (first prize is £30). I hope that this new class will encourage more members to show at Southport, after all, Pebworth proved that members can do it if they put their minds to it!

I discussed with the Show Secretary, Mr Dave Drury, the possibility of the British Pteridological Society Trophy being added to the prize money for class 6. It has not been presented since the demise of the old class 7.

This year's judges were A R Busby and R L Godard-Key. The prize-winners are listed below.

Class 6	Individual Championship: Four hardy ferns, two greenhouse ferns, two hardy foreign ferns: 1st R J Smith, 2nd B Russ (3 entries)
Class 7	Three Hardy British Ferns (dissimilar): 1st R J Smith (2 entries)
Class 8	Three Foreign Hardy Ferns: 1st Mrs A G Beenham (1 entry)
Class 9	Three *Asplenium scolopendrium*: (No entries)
Class 10	Three *Polypodium* (distinct varieties): 2nd R J Smith (1 entry)
Class 11	Three *Polystichum* (distinct varieties): 1st R J Smith (1 entry)
Class 12	Three *Athyrium* (distinct varieties): (No entries)
Class 13	Three *Dryopteris* (distinct varieties): (No entries)
Class 14	Three *Asplenium* (excluding *A. scolopendrium*): 1st H C Shepherd, 2nd R J Smith (2 entries)
Class 15	One British Fern (any kind or variety): 1st R J Smith, 2nd Mrs A G Beenham, 3rd I Rawson (3 entries)
Class 16	One Greenhouse Fern: 1st Mrs E A Gibb, 2nd R J Smith, 3rd I Rawson (3 entries)

The 'Challenge Trophy' awarded to the exhibitor gaining the most points in the fern classes, was won by R J Smith.
My thanks to Jack Bouckley and Ray Smith for helping with the staging and manning of the Society's stand.
I would welcome any enquiries about exhibiting ferns at Southport Flower Show and will advise on the identification, growing and presentation of the exhibits.

[Correction to the 1990 Show Report, Class 13 Three *Dryopteris* should read, 1st B Russ (1 entry)]

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LECTURE MEETINGS 1991

SPRING INDOOR MEETING, THE NATURAL HISTORY MUSEUM, LONDON – 2 March. This first meeting of our Centenary was attended by over forty members and friends. The day began with a tour of the pteridophyte herbarium in the Museum's Botany Department led by Mary Gibby. This was an excellent opportunity for folk to see what a herbarium is, view some of the historical fern collections and find out what goes on 'behind the scenes'. Members were then free to peruse for the first time the Society's 'travelling exhibition', as well as a poster on Madeiran ferns prepared by Mary Gibby and Alison Paul. Steve Munyard did a roaring trade with BPS Booksales, and Society merchandise also sold well.

Our President, Barry Thomas, introduced the afternoon session, formally welcoming us to the first meeting of what was to be a most enjoyable and successful year of Centenary celebrations.

Clive Jermy gave a fascinating talk on a recent visit with Josephine Camus to the southern part of the Gunung Mulu National Park in Sarawak, Borneo. Slides illustrated some of the spectacular scenery, including the remarkable limestone pinnacles, and the different vegetation types. It was horrifying to see the erosion of land and silting up of rivers as a result of the devastation of primary rain forest through logging. The alluvial forest is very dark and dense, and a raised walkway had been constructed to protect the forest floor. Native tree-climbers were used to collect in the forest tree canopy, moving from tree to tree gathering epiphytes such as *Drynaria* and other polypods. Other ferns such as *Lindsaea* and the very unfern-like *Christensenia* grow more accessibly on the forest floor. The epiphyte *Antrophyum*, itself covered with epiphyllous lichens and liverworts, was another of the many diverse pteridophytes illustrated.

A few associations of flora and fauna were mentioned: *Lecanopteris*, with its hollow rhizome inhabited by ants, a mutually beneficial arrangement, and pitcher plants providing a home for tadpoles! Open areas resulting from landslips or burning allow species of *Gleichenia* to colonise; the *Blechnum* shown could withstand burning, fronds regenerating from its 'trunk'. Clive concluded with a description of some caves visited. The thought of the deep bat guano, spiders, grasshoppers and earwigs was most unpleasant, but we were left with the incredible picture of clouds of bats pulsating out of a cave to feed in the twilight.

Matt Busby then gave a most interesting discourse which he entitled 'Random thoughts on fern growing'. This could be summarised as (1) be patient, and (2) prepare the ground well. Matt described the development of his own garden in Coventry where, having been used to a good loam soil, he said his big mistake was to dig the heavy clay before planting ferns in the borders. Two very wet years followed and the ground alternated between being like concrete and wet clay. The solution was to build up the depth of top soil, adding plenty of bulky organic matter to open up the clay and aid moisture retention. Ideal materials for mulching include beech or oak leaf-mould, coir fibre and spent mushroom compost. The latter medium does contain lime, though most hardy ferns will grow in it, and some, such as various species of *Polystichum* and *Cyrtomium*, love it. Interplanting ferns with winter-flowering heathers provides shade for the roots and preserves soil moisture.
Much discussion ensued, mainly on the relative merits of a variety of shredders!

After tea we heard about two of the 1990 BPS meetings. Paul Ripley had led a very successful and enjoyable trip to Brittany in May and showed slides of some of the interesting places visited and pteridophytes recorded. *Asplenium marinum* and *A. obovatum* subsp. *lanceolatum* (=*A. billotii*) were both relatively common on coastal cliffs, but a taxon not known in Britain, *A. obovatum* subsp. *obovatum* was also seen. One of the most exciting occasions on the trip was when the cover of a well in Le Cleuziou was removed to reveal *Trichomanes speciosum* growing luxuriantly. (This site had been found by Rémy Prelli.) Another fern new to many of the party was *Anogramma leptophylla*, seen growing in abundance on roadside banks near St-Pol-de-Léon. Large stands of two horsetails were illustrated: *Equisetum ramosissimum* in the sand-dunes near Cap Fréhel, and *E. hyemale*, abundant in damp clearings in a wood where *Dryopteris carthusiana* was also present. Paul's closing slide showed members partaking of coffee outside the *Pelargonium* - bedecked buildings of St Giles le Vieux Marche!

Deeside in NE Scotland was our last port of call, with Steve Munyard as our guide. The Linn of Dee was one of a number of sites where oak and beech ferns were recorded and we were also shown *Equisetum sylvaticum* and some crested *Dryopteris filix-mas* here. At Linn of Quoich *Polystichum lonchitis* was found, just as described by G. Dickie in his *Botanist's Guide* of 1860. Among other pteridophytes illustrated were *Diphasiastrum alpinum, Lycopodium annotinum, Equisetum pratense* and *Cystopteris fragilis*. One morning was spent exploring the coast, especially studying *Cystopteris dickieana* in its type locality in a sea-cave. *Asplenium marinum* was also found here.

Thus ended a very full day and I would like to thank all those who contributed to its success.

A M Paul

AUTUMN INDOOR MEETING, KEW - 12 October. Nearly sixty people attended this year's meeting at The Royal Botanic Gardens, Kew, to hear four very different talks on growing ferns.

Matt Busby opened the meeting by outlining his method of husbandry for 'indoor' ferns and he continued with a fascinating demonstration of ferns which he, and not infrequently his eagle-eyed wife, Margaret, had found in supermarkets and garden centres. He listed eleven species which were commonly available, including two *Adiantum* spp., two *Pellaea* spp., *Doryopteris pedata* and *Didymochlaena truncatula*, whilst *Blechnum occidentale, B. gibbum, Davallia fejeensis* and *Hemionitis arifolia* were amongst those less commonly available. It is likely that aquarist shops will become hunting grounds for pteridologists after Matt described how he had found two rarities, *Trichomanes speciosum* and *Isoetes flaccida*, being sold as water plants.

Moving Matt's collection of ferns as far away as possible to make way for a collection of pest-infected plants, we next heard from John Woodhams on how to cope with these scourges of the indoor plant enthusiast. Whilst noting that chemical control may not always be avoidable, at least at present for reasons too well-known to be repeated here, John advocated treatment with biological controls, a number of which are now available to the amateur as well as to the professional grower. He illustrated his talk with slides of the pests with which we are familiar and the organisms, including insects, an eelworm and even a fungus, which are used to control them, describing how they either devour or parasitise their prey. John concluded by warning his listeners that patience was required when using biological controls as their effect was not as immediate as that of chemical sprays!

Jack Bouckley described his introduction to, and fascination with, growing aquatic pteridophytes, explaining how he mimics, as far as possible, the environmental conditions in which these plants grow. Several ferns, e.g. *Pilularia*, grow at pond margins which partially dry up in summer, so Jack allows the water level in his pots to fall in the summer months. Among his recommendations to try growing were *Marsilea, Pilularia, Azolla* and *Salvinia* species, plus some ferns which are called to mind less frequently when one thinks of aquatic pteridophytes, such as *Ceratopteris* and *Dipteris*. Older plants of *Marsilea quadrifolia* are hardy and this was suggested as an unusual protective habitat for spawning fish and young frogs in a garden pond.

The meeting finished with an illustrated talk by Martin Rickard on some of his recommendations for interesting and attractive hardy ferns to grow in the garden. Many of the plants which he featured are to be found in his own collection at Leinthall Starkes, including his favourite amongst the dryopteroid ferns, *Dryopteris wallichiana*, with its black scales contrasting with its light green fronds (he showed a particularly fine specimen with eight foot long fronds - not, however, in his own garden!). Others included *Polystichum stenophyllum*, which produces bulbils at the end of its fronds, *Arachniodes denticulata*, with beautiful triangular fronds, found at high altitudes in Mexico and also Jamaica, where incidentally it never takes a frost, and several *Woodwardia* species recommended for features such as delicate fronds, coloured croziers or for just being a picture when frosted *(W. fimbriata)*. An intriguing recommendation was the use of *Blechnum penna-marina* as a lawn plant! And, of course, Martin could not omit his tree-ferns!

All the talks were followed by interesting discussions and at the end of the day those who attended felt that their journeys from far and near had been well worthwhile and that we had enjoyed a fitting end to our Centenary year's programme of meetings. It is hoped that fuller accounts of these talks will appear in a future edition of the *Pteridologist*.

J M Ide

TRANSLOCATION AND REINSTATEMENT OF RARE PLANTS

There is a renewed interest in the translocation and reinstatement of rare vascular plants with the aim of establishing self-sustaining populations of endangered species, and this interest is beginning to extend to cryptogams. A Rare Plants Translocation Panel has been set up to (a) record such undertakings for future information, (b) to provide advice (the Panel has produced a set of guidelines) and (c) to put interested people in touch with one another for their mutual benefit. The Panel consists of Frank Brightman (South London Botanical Institute), Duncan Donald (Bot. Soc. of the British Isles), Lynne Farrell (English Nature), Sue Minter (Chelsea Physic Garden), Franklyn Perring (Bot. Soc. of the British Isles) and Joyce Stewart (Royal Botanic Gardens, Kew). The Panel would like to hear from anyone who is or wishes to be involved in translocation projects, and asks them to write to Sue Minter, Chelsea Physic Garden, 66 Royal Hospital Road, Chelsea, London SW13 4HS, who can also supply copies of the Guidelines for Translocation.

NATIONAL FIELD MEETINGS 1991

YORKSHIRE DALES - 8-9 June

J H Bouckley

There was a very disappointing turn-out at Ripon on the first day of this meeting. Apart from members of the local group there was only one other member and he had made the trip from Portsmouth. However, we set off for a site called Hack Fall near Grewelthorpe, an SSSI which has been bought by the Woodland Trust on a 999 year lease. It occupies the steep north and east-facing slopes of the Hack Fall Gorge along the banks of the River Ure. Conditions vary from cliffs of Brimham Grits to calcareous springs, so the vegetation naturally varies accordingly, as can be seen in the list of ferns etc. which we found. They were *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* subsp. *affinis* and subsp. *borreri, D. dilatata, D. filix-mas, Equisetum arvense, E. telmateia, Phegopteris connectilis, Asplenium scolopendrium* (some with variations), *Polystichum aculeatum, P. setiferum, Polypodium vulgare, Pteridium aquilinum* and *Asplenium trichomanes* subsp. *quadrivalens*. There were also some very impressive stands of *Carex pendula*.

After we had finished the fern hunting we went a few miles down the road to look round the gardens of Mr and Mrs Ramsden, where we enjoyed a very welcome cup of tea and cake. The garden covers quite a few acres with its own very large lake complete with ancient waterwheel; there is also a tufa cliff and a newly found tufa rockery where they are hoping to establish ferneries. The leader for the day was Jack Bouckley.

On Sunday morning Bob Adams led the party along the Skell Valley south of Fountains Abbey, stopping on the way to peep over a wall at the side of the road where *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens* and *A. ceterach* were growing in the mortar. We continued to the Skell where we took a gentle amble downstream along an old pack-horse or coach road, making a circular trip back to our cars. The ferns in this part were *Athyrium filix-femina, Cystopteris fragilis, Dryopteris affinis* subsp. *affinis, D. dilatata, D. filix-mas, Polypodium interjectum, Polystichum aculeatum* and *Pteridium aquilinum*.

After lunch at a local inn Jack led the party on to Ravens Gill, just off the Nidd valley to search, among other things, for Wilson's filmy fern which had been reported recently. This is a very interesting steep-sided gorge and is mainly gritstone. It is not easy going as some of the rocks which have fallen down the sides are half the size of a bus. However, our count for the afternoon was *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* subsp. *affinis,* subsp. *cambrensis* and subsp. *robusta* with fronds 5ft 9ins high, *D. dilatata, D. filix-mas, Gymnocarpium dryopteris, Oreopteris limbosperma, Phegopteris connectilis* and bracken, but no *Hymenophyllum wilsonii*. [This filmy fern has since been found along Ravens Gill.]

After this the party went back to Jack's house to see his garden and partake of food and fluid which Ruth had prepared.

RADNORSHIRE - 21-23 June

A R Busby

Heavy rain disturbed the slumber of the members in the Brynaton Country House Hotel, Rhayader during the night of 21st June. That evening our leader, Ray Woods, had given the assembled party an illustrated talk describing the habitats and plants we were likely to see that weekend.

The next morning, the heavy rain continued but now in fits and starts as 24 members assembled with Ray Woods and Patrick Acock, who co-led the meeting. We made our way to a wooded valley at Ciliau through which ran the River Wye at 32/107428 with easy access and parking provided by an old railway line that had become a metalled road. Heavily garbed in waterproofs, we slipped and squelched our way down to the river, noting *Asplenium trichomanes* on the supporting pillars of the old viaduct and on the adjacent grassy banks. *Dryopteris filix-mas* and *Athyrium filix-femina* were present, as was *Pteridium aquilinum. Polystichum setiferum and P. aculeatum* were soon found and a plant adjacent to both appeared to me to carry the characters of both, suggesting *P.* x *bicknellii*, but other members argued otherwise. It was too early in the season to be able to check for abortive spores so the plant remains undetermined but it is hoped that someone will return later in the season to carry out further observations.

We continued on our way with the rain on our heads and the river at our feet, and noted *Asplenium scolopendrium* and *A. adiantum-nigrum*, the latter growing from the fissures of the valley's rocky sides. Scaling the heights of the bramble-covered cliffs in the hope of finding something different, I returned with *Polypodium vulgare*, seen by the others elsewhere with less discomfort. Further along the river we halted at another rock outcrop where, in the dim light of a torch, we were shown what we were assured was the prothallial stage of *Trichomanes speciosum*, which extracted from one member of the group the comment that it resembled a piece of green baize from a billiard table. Some of our party wandered away from the river to explore the sides of the wooded valley. They returned with reports of finding *Gymnocarpium dryopteris*, while those of us remaining faithful to the river saw *Cystopteris fragilis*, with plenty of *Dryopteris filix-mas, D. dilatata* and *D. affinis* throughout the area. After further progress revealed nothing new, we returned to our cars.

Our next site was an open hillside above Yr Allt, 32/0745, where we had lunch. We then walked half a kilometre over short grazed grassland where we saw *Ophioglossum vulgatum*, to a shallow pond where *Pilularia globulifera* had been recorded. In spite of careful searching, we failed to refind it, nor did we find *Botrychium lunaria* which had also been reported there. As the only other fern present was *Pteridium aquilinum* we moved on. A short distance in the cars brought us to a private wooded valley at 32/0847. Here the going proved more difficult, for the steep valley sides were strewn with fallen trees and covered with bramble thickets. However, it was exciting to come across a glade of Welsh poppies, *Meconopsis cambrica*, and we did find *Asplenium scolopendrium, A. adiantum-nigrum, A. trichomanes, Dryopteris filix-mas, D. dilatata, D. affinis, Polystichum setiferum* and *P. aculeatum*. Elsewhere in the valley, close to the river, was *Blechnum spicant* and *Pteridium aquilinum. Polypodium vulgare* was added to the list thanks to Patrick Acock climbing into the branches of a tree to secure a piece for identification.

The rain had now given way to short heavy showers and Ray kindly invited the party back to his cottage near Newbridge-on-Wye for refreshments and a look at his garden. The cottage is tucked into the edge of wooded land and, with a stream forming one of its boundaries, here was shade and moisture in plenty. Ray had taken full advantage of this to plant many native and foreign hardy ferns, examples of which were *Asplenium trichomanes-ramosum* (=*A. viride*), *Athyrium filix-femina* 'Cruciatum', 'Crispum', and 'Angustato-cruciatum', *Polystichum setiferum* 'Divisilobum', *P. tripteron, P. munitum, P. falcinellum, Gymnocarpium dryopteris, Onoclea sensibilis, Theylpteris palustris, Blechnum chilense, Polypodium vulgare* 'Cornubiense' and large plants of *Asplenium scolopendrium* clothing the banks of the stream. Other notable plants included *Potentilla* *rupestris, Medicago intertexta* subsp. *intertexta, Artemisia vulgaris* 'Variegata', *Bellis vulgaris* 'Variegata', *Valeriana pyrenaica, Lamium orvala* and many other choice garden plants. After a very welcome cup of tea, Ray led the party to our last site, an SSSI near Newbridge-on-Wye, where *Botrychium lunaria* and *Ophioglossum vulgatum* were seen in competition with *Pteridium aquilinum*. As the latter appeared to be gaining ground a few moments were spent by all of us pulling out the bracken to discourage it. Feeling well satisfied that we had done our bit for conservation, we returned to our respective hotels with sharpened appetites.

Sunday morning found us assembled beneath the Caban-Coch Reservoir in the Elan Valley, 22/9364, where we quickly found *Dryopteris affinis* morph. *paleaceo-lobata, Gymnocarpium dryopteris, Oreopteris limbosperma, Dryopteris dilatata* and *Athyrium filix-femina*. On the reservoir's rocky sides we found *Asplenium trichomanes, A. ruta-muraria, A. ceterach* and *Dryopteris filix-mas*. Along the rocky path close to the water we found our first plant of *Phegopteris connectilis* and, washed up along the water's edge, the quills of *Isoetes lacustris*. Clambering up a steep wooded valley with moss-covered boulders and trees, we found *Hymenophyllum wilsonii, Blechnum spicant* and more *Phegopteris connectilis*.

photo: A Leonard

Elan Valley, Radnorshire. Matt Busby, Richard Unett, Patrick Acock, Ray Woods, Anthony Pigott

We retraced our steps to the visitors' centre for lunch and said our goodbyes to those wishing to make an early start for home. The remaining members took up Ray's offer to show us an *Asplenium septentrionale* site. On our way we stopped at a roadside site at 22/9166 to see more *Hymenophyllum wilsonii*. Finally we arrived at Cwmystwyth 22/7874, where we were able to admire large plants of *Asplenium septentrionale* growing on the roadside walls. Other ferns along the road were *Asplenium ruta-muraria, A. adiantum-nigrum, A. trichomanes, Athyrium filix-femina, Polypodium interjectum, Dryopteris filix-mas, D. dilatata, D. oreades, D. affinis* morphotypes *affinis, borreri* and *cambrensis* and *Pteridium aquilinum*.

It was now time for the remaining members to thank Ray Woods for leading the meeting and providing us with such good ferning and excellent refreshments.

ISLE OF SKYE - 4-10 August

A C Jermy & A C Pigott

The Centenary field meeting in Scotland was to the Isle of Skye, where over the week 26 members and guests enjoyed some surprisingly very good weather, needing compass and radar to reach our destination on only one day. The meeting was also truly international, with overseas members from Belgium, Finland, France and Germany, and it was particularly good to have with us Rémy and Annie Prelli, our hosts for the Brittany excursion last year. It was also good to have the guidance of the BSBI Recorder for the island, Mrs Catriona Murray, who advised on our programme and joined us whenever she could. Andrew Currie, recently retired ARO of the Scottish Nature Conservancy, also advised the leader, Clive Jermy; his successor as ARO, Lesley Cranne, was unfortunately away from the island during the period of our visit.

Skye is remarkable for its variety of geology, topography and climate which creates a wide range of habitats. Its flora, both flowering plants and cryptogams is comparatively rich and although not all groups of the latter have been listed, the pteridophytes are included in the latest and most comprehensive checklist by Catriona Murray and John Birks[1]. In a vascular flora of 750, 52 pteridophytes have been recorded, including at least five hybrids. Our excursion added a further *Equisetum* hybrid (*E.* x *dycei*) and the gametophyte stage (see below) of *Trichomanes speciosum*. Substantial material was collected for a detailed nationwide survey of the *Dryopteris affinis* group (M Gibby, A C Pigott & A C Jermy, in prep.).

The climate, geology and landforms of Skye are summarised by Murray *et al.*[1] and given in more detail by Birks (1973)[2]. On such a mountainous island on the edge of a major ocean, temperature and rainfall will vary seasonally (even daily) and according to the topography, and annual averages mean little. However, the official rainfall map based on averages from 1941-70 gives 3400mm in the Cuillin mountains and just under 1400mm at the seaward ends of the northern peninsulas, the driest part of Skye (R M Murray, in Murray *et al.*[1]), suggesting that the island (and its ferns) do enjoy a wet climate.

The party met on the Saturday evening in the sumptuous bar of the Skeabost House Hotel to find, it appeared, that the only meal available would cost £18.00 in the restaurant! Assured by our Meetings Secretary that somewhere in the establishment we would find the bar meals as advertised in our programme, we eventually found the bar for the locals - round the back, which served the same excellent food at less than a quarter of the restaurant price. Our party was scattered; some in the hotel, others in B&Bs in the village or camping with the midges. However, replete with chanterelles and grouse all slept soundly that night and met at 09.30 at the hotel the next day.

Sunday was to be *Equisetum* day and led by Catriona we drove round the Trotternish Peninsula. Our first stop was on the Staffin road at the Rigg Burn (18/513560) where we saw *E.* x *font-queri* (*palustre* x *telmateia*) in great quantity, a truly remarkable plant, growing with such vigour along almost two miles of roadside. We then moved on to Kilmaluag, where on the west side of the cluster of houses named Solitote, in roadside ditches draining acid bogland, we searched for *E.* x *rothmaleri* (*arvense* x *palustre*) at the site where it was first found in Britain by Chris Page in 1971. Although the parents were abundant and growing very close together, we failed to find shoots that were obvious hybrids. Later in the week, however, Marcus Veit and his students from the University of Würzburg, who had joined us in the latter part of the excursion, did refind the hybrid along that roadside.

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[1] Murray, CW, Birks, HJB & Murray, RM (1980). The Botanist in Skye, a Checklist of the Plants of the Islands of Skye and Raasay. BSBI, London.

[2] BIRKS, HJB (1973). Past and Present Vegetation of the Isle of Skye. University Press, Cambridge.

Lunch was had at Duntulm Hotel and before moving on we looked for *E.* x *dycei* around a nearby loch. We did not find it, although again, the parents were there in abundance. We continued down the west coast of the Trotternish peninsula to Hinnisdal Bridge (18/396576) where, on the river bank, Catriona showed us a stand of *E.* x *trachyodon* (*hyemale* x *variegatum*). The stand was on the cutting edge of a meander and in danger of getting cut away, hopefully to lodge downstream. Some returned home at this point but a small party searched woods along the River Rha (18/395643) where interesting *Dryopteris affinis* subsp. *borreri* were seen.

Monday dawned fair and dry and with Catriona in the lead we went to Bay (18/269540) where the first obstacle was to cross the river of that name. Some members wearing wellingtons had no problem and were prepared to throw them back for others to use, invoking the ancient art of 'tossing the welly'; the tough ones like octogenarian Joan Clark simply rolled trousers to the knees and walked across. A few others went upstream to cross at a narrower point - and saw *Equisetum pratense* en route. The low basalt cliffs had *Asplenium adiantum-nigrum, A. scolopendrium, A. trichomanes* subsp. *quadrivalens* with *Dryopteris dilatata* and problem plants of the *D. affinis* group including unusual *borreri* and *cambrensis* forms. We then made to the north, toward what on the map was deciduous woodland on the steep cliffs. It was mainly hazel with some mountain ash where we found nice stands of the beech fern and a few plants of the oak fern. The more energetic ones went on round the point and over the hill whilst car drivers returned to drive round to meet them at Claigan. Tea was had at Loch Suardal (18/240510), where, pretending to look for *Equisetum* hybrids, some members looked at the sedges in the extensive marsh round the edge.

On Tuesday we went farther afield to get greater variation in the geology. Going south-east to Broadford we then took the A881 down (another) Strath Suardal to park alongside Loch Cill Chriosd (18/612203) and explored some very fine Cambrian limestone gullies dissecting a wooded hill. On a cliff by a waterfall Anthony found *Dryopteris affinis* subsp. *affinis* (somewhat more divided and more sharply toothed than usual) and *D. affinis* subsp. *cambrensis*. All the expected limestone plants were there with very nice *Asplenium trichomanes-ramosum* (*A. viride*) but *Cystopteris* was a very rare plant. At the top of the hill was sandstone with *Gymnocarpium dryopteris*, but some of the party walked over to the old quarry with the hope of finding *Botrychium*, alas, this was not fulfilled. Lunch was taken at the coast at Camus Malag and then we browsed for a time on the lower reaches of Allt nan Leac amongst limestone boulders and sinkholes. Catriona Murray joined us again at this point and showed us a stand of *Polystichum* x *bicknellii* at Dùn Mór, Torrin (18/574202). This is a puzzle plant as one of its parents, *P. setiferum*, is not recorded for the island. It may of course, be in somebody's garden, or in some gully on the Torridonian sandstone.

The afternoon was spent at the northern end of the Strathaird peninsula where we had a pleasant walk along a well-worn path up the Allt na Dunaiche to Coire Uaigneich (18/540214). This was a fascinating gully in calcareous Jurassic sediments (sandy limestones) covered on the west side by gabbro and peridotite screes falling from Blà Bheinn. Here was *Phegopteris* mixed with the oak fern and in clefts, hart's tongue, the hard shield fern, the holly fern and very finely dissected fronds of a *Cystopteris*, very similar to *C. alpina* (*C. regia*) a plant of the Alps of Europe, but not recorded for Britain. The scaly male fern of these limestone areas appears to be mostly *D. affinis* subsp. *borreri*, with some subsp. *cambrensis*, and Ronnie Viane found *D. oreades* on the acid gabbro screes just above.

On Wednesday we packed our bags in Skeabost Bridge and made for Sleat peninsula where the Hotel Eilean Iarmain, Isleornsay, was our comfortable headquarters. Again the non-residents were accommodated with excellent bar meals.

The geology on the eastern side of Skye contains considerable Torridonian sandstone with schists and gneiss in the southern part of the Sleat. Moorland and bog covers most of the sandstone country but in valleys running into the Sound of Sleat interesting oak-ash woods occur. It was in some of these woods that we concentrated on Wednesday.

On leaving Broadford the party split. Clive Jermy took a small group via Sgurr na Coinnich (18/763221) to search for a form of *Diphasiastrum complanatum* collected from 'Skye' by M A Lawson in 1868, and not seen since. It appears, from herbarium specimens in the Natural History Museum herbarium, to be the same as that clubmoss described from Gloucestershire as *Lycopodium* (*Diphasiastrum*) *alpinum* var. *decipiens* (hitherto wrongly called *D.* x *issleri*) and more recently found in south Sutherland and in the Cairngorms. These hills were suggested as a likely spot by John Birks, but we failed to find it.

The main party, led by Anthony Pigott, explored the Forestry Commission woodlands at Ardnameachan (18/710150) and we are grateful to the Commission for allowing us the privilege of driving along their road to Rubha Guail (18/731155). Amongst mature conifers, along the rides, were a multitude of scaly male ferns (mainly *borreri* and *cambrensis* forms) which were studied in detail by Anthony.

It was our intention that the two groups should meet at Allt Caillte, but neither made it that far. The oak-ash woods found down that coast in sea-cove gullies were good for ferns: *Dryopteris aemula*, *D. affinis* (including both *borreri* and *cambrensis*), oak fern and beech fern were quite common. The gullies, however, were narrow and difficult to penetrate. Large sandstone boulders formed deep clefts and softer bedded sandstones would erode leaving deep undercuts; in both, in the darkest areas in several gullies, Clive found the sterile filamentous gametophyte of *Trichomanes speciosum*, the Killarney bristle fern. This gametophyte, which for some unknown reason is reluctant to form sex organs and therefore never produces the 'adult' fern or sporophyte, has been found in similar sandstone crannies from Cornwall to Sutherland. This was the first record from Skye and was found independently the same afternoon and in similar situations at Rubha Guail by Rob Cooke, who was with the main party in Kinloch Woods.

Thursday saw us making for yet another 'hanging' wood, Coille à Ghasgain (18/640121), a south-facing birch wood on sandstone in the east and schists in the west, with rowan, oak, hazel and willow. *Dryopteris aemula* was frequent here with the rarer *D. affinis* morph. *paleaceo-lobata*. *Hymenophyllum tunbrigense* was seen in two areas. We lunched at Ord and spent the afternoon looking at the woods between there and Tokavaig. One gorge up the Allt an Leth-bheinn proved very rich with much *Asplenium scolopendrium*, *A. trichomanes-ramosum*, very narrow-fronded *D. affinis* subsp. *affinis*, *Hymenophyllum wilsonii* and *Polystichum aculeatum*, and flowering plants like *Melica nutans*, *Epipactis atrorubens*, *Arctostaphyllos uva-ursi* and apparently *Paris quadrifolia*, although we did not see it. These woods are also very good for their Atlantic bryophytes but no *Trichomanes* gametophyte was seen. On limestone rock-faces a small *Dryopteris oreades*-like plant

photo: J Ide

Coille à Ghasgain, Isle of Skye. Andrew Leonard, Clive Jermy, Elise Knox-Thomas and Anthony Pigott puzzle over frond of *Dryopteris affinis*.

was seen which turned out to be *D. filix-mas* with very thick indusia and leaf segments hardly toothed at all.

On the last day the weather began to break and the morning and early afternoon were wet. We spent the morning just north of Armadale, at Drochaid á Mhuilinn (18/647059) looking at deciduous woods near the shore, again with many small but often deep and narrow gorges running through them. This was another good *Dryopteris* site with interesting forms of *D. affinis*, including two distinct forms of subsp. *borreri*, namely the classic 'cat's ear' form and one with much darker scales at the base of the stipe.

At 1400 hrs we had assembled on the hill at 18/622068 looking through a dense mist to where Loch á Ghlinne should be. Rain was coming horizontally from the west and we gritted our teeth and struck out into its full blast. On reaching the loch the rain had stopped and we headed for the woodland with renewed enthusiasm. Beech (*Fagus sylvatica*) had been planted there possibly at the turn of the century and, as one might expect, ferns were scarce. There were a few ravines with more native trees (oak, birch, rowan, hazel) but still the ferns were mundane: *Dryopteris affinis* subspp. *borreri* and *cambrensis*, and *D. dilatata* being the only three in any quantity. Nevertheless, one good find was made by our German member, Marcus Veit, who collected *Equisetum* x *dycei* at the east end of the loch, a new vice-county record for Skye. The walk home to waiting cars was long but the sun was shining.

This excursion was exploratory. It showed us that there is scope for many more trips to Skye. We thank the local people with whom we came into contact; everyone was helpful. Hopefully many of us will be back soon.

photo: J Collins

LAKE DISTRICT - 18-25 September

P J Edwards

The week's events started with the first 35 or so members assembling for a briefing after dinner at the Heaves Hotel, Levens, four miles south of Kendal. Matt Busby had prepared a very full programme, well set out with maps and timetable on a 20 side handout.

THURSDAY's leader was Cynthia Kelsall and the day was spent at gardens making a feature of ferns in this area of acid soils with 65-70 inches of rainfall per year. The Schofield's garden at Crosthwaite had some 50 fern species and varieties in an area just 9 x 9 m, stepped on four levels by the attractively scaled use of limestone obtained from the farm they used to run nearby. A tiny and charming circular sunken brick enclave (with an even tinier pond at the bottom) sported a fine miniature crested *Asplenium scolopendrium* and an *A. trichomanes* with deeply dissected pinnae - 'Incisum Moule'. Pride of place, however, went to a plant of *A. ceterach*. We were informed that this form, with its broad, even crenations was the commonest form on mortared walls in Hawkshead. At Robert Sykes' steeply sloping garden we were greeted with a superb varied mass of *Polypodium vulgare* covering 3 x 3 m in an L-shaped bed within retaining walls. Robert had obtained all these from a spore sowing from just one frond of var. *trichomanoides*. For spore exchange purposes, this will be known as 'Robert Sykes mixture'. Also admired were some *Polystichum setiferum* (Setigeratum decompositum group according to Jimmy Dyce), and a beautiful *Asplenium scolopendrium* 'Crispum' discovered by Robert in Ireland.

After lunch at The Punch Bowl the party moved on to the Lakeland Horticultural Society's garden at Holehird, (35/410009) just north of Windermere. This beautiful garden holds a National Collection of *Polystichum*, as well as *Astilbe* and *Hydrangea*, and Jimmy got to work naming the hardy *Polystichum* on their 20° sloping bed. Here are excellent divisilobum types of *P. setiferum*, including a 'Plumosum acutilobum' so lush as to give the impression of a dwarf conifer! Unfortunately the loss of some sheltering branches and late June frosts had affected many of the plants, hopefully only temporarily. Cynthia estimated that some Holehird stocks of the *P. setiferum* Multilobum group could be a 100 or more years old, and one, 'Grand Moly' (with beautiful subpendulous fronds), was probably a direct descendant of one of Greenfield's plants. A vigorous plant of a congested form of *Athyrium filix-femina* turned out not to be 'Frizzeliae', 'Congesto-pinnulum' was suggested by Jimmy for this. The garden's backdrop of the Langdales was magnificent, and so too were the tea and cakes we took in an airy new room, served up by some of the 30 or so keen and dedicated volunteers that keep this garden in excellent condition.

Centenary Field Meeting, Heaves Hotel, Kendal, Cumbria, 21 September 1991

Standing: Cynthia Kelsall, Gavin Stark, Clive Jermy, Ted Munyard, David Kershaw, Peter Barnes, Anthony Pigott, Alf Hoare, Keith Holly, Peter Boyd, Nick Schroder, Margaret Harris, Trisha Craddock, Mick Craddock, Linda Craddock, Ruth Bouckley, Ray Smith, Brenda Smith, Martin Rickard, Margaret Collins, Alan Ogden, Margaret Nimmo-Smith, Neil Timm, Peter Edwards, Doreen Holly, Graham Hoare

Sitting/kneeling: Dorothy Fortune, Jennifer Ide, Vera Horner, Mary Gibby, Alma Jermy, Nick Hards, Les Dugdale, Matt Busby, Barry Thomas, Jimmy Dyce, Olive Walker, Jack Bouckley, Margo Ladell, Elise Knox-Thomas, Graham Ackers, Alison Paul, Andrew Leonard, Eleanor Hards, Rosemary Hibbs, Marjorie Garstang

While our future President was having his photograph taken for *The Observer* newspaper amidst a sea of ferns, some of us enjoyed a tour of part of the garden at Brantwood, Coniston, home of both Linton (author of *The Ferns of the English Lake Country*) and Ruskin, conducted by Sally Beamish, the head gardener, and Rosamund Henley, her assistant. In single file we explored an ice-house built into a steep bank which is being cleared of *Rhododendron ponticum* scrub so that a fern garden can be created instead. We continued walking through the wooded area where there were large drifts of ferns: *Dryopteris affinis, D. filix-mas, D. dilatata, Athyrium filix-femina* and *Oreopteris limbosperma*. A large plant of *Dryopteris* x *complexa* showing hybrid vigour caused much interest. Our thanks go to Sally and Rosamund for this addition to our programme and it is hoped that their plans for Brantwood will be described in the *Pteridologist* soon, particularly as they would like assistance in finding ferns for planting. [Please contact Margaret Nimmo-Smith for further information.]

After dinner Elizabeth Clark, a local gardener, ecologist and botanist, gave a wonderfully concise and revealing overview of gardening in the Lake District from the 17th century to the present day, making clear what original post-glacial habitats formerly occupied now-gardened sites, and describing the often dramatic variation in local weather conditions in the district.

FRIDAY commenced with an informative talk about *Dryopteris* by Mary Gibby. From the beautiful *D. crispifolia* to the *D. affinis* complex, Mary's enthusiasm for this genus was obvious, and some of it rubbed off on the big audience. The value of a field microscope was emphasised as essential for showing up the high frequency of aborted spores typical of hybrids, which all of us were encouraged to look for. The interface/link between work on fern chromosomes and human chromosomes was brought out in a good series of astute questions at the end, touching, of course, on Stanley Walker's work.

Mid-morning we visited Roudsea Wood (34/332828), a 274 ha (582 acre) National Nature Reserve established in 1955. Mr Singleton, the warden, gave an introduction to the site's dozen broad habitats, and we spent three hours exploring a small part of this often 'primaeval-feeling' site. *Phegopteris connectilis* occurred in sheets up to 10 x 10 m under hazel, downy birch and aspen. *Dryopteris affinis* subsp. *borreri* was occasional, and a few *D.* x *deweveri* were found on the edge of a dense grass/sedge sward under a light alder and downy birch fen, the whole such full of otherwise juvenile or sporeling *Dryopteris* plants. Many remarked on the close juxtaposition here of *Blechnum spicant* with *Phegopteris connectilis. D. carthusiana* and *Athyrium filix-femina* were also present. Many juvenile *Asplenium trichomanes* in limestone crevices were enlivened by the presence of a few adults with deeply crenate margins, and *Polypodium vulgare* was also recorded. In a wet, wild, open corner (not far from a Characeae-dominated pond) a 1.5 m high *Osmunda regalis* with over a hundred fronds occurred, with *Pteridium aquilinum* nearby.

The second half of the afternoon found most of us at Grizedale Forest (34/336946), Jimmy Dyce and Jack Bouckley having rejoined us after a morning photo session with *The Observer* photographer! The stream through the visitor centre area bore huge *Athyrium filix-femina* on its damp bank, along with *Polypodium vulgare* and *Dryopteris affinis*. On a wet path-cum-streamside *Oreopteris limbosperma* was large and abundant, and even larger *Dryopteris affinis* subsp. *cambrensis* was seen, with its 'pie-crust' indusia. The 'hamburger-bun' indusia on adjacent *D. affinis* subsp. *paleaceo-lobata* were examined, as well as the fresh, spring-like appearance of the plants, the last of the *D. affinis* complex to develop each year. In a small felled area amongst the spruces were dense colonies of *Oreopteris limbosperma, Athyrium filix-femina, Blechnum spicant, Dryopteris dilatata* and *D. carthusiana,* among first year foxgloves and brambles. Nearby, a steep gully with thinned spruces and a swift stream provided some minor *Blechnum spicant* varieties and *D. affinis* subsp. *cambrensis* to 1.8 m high amidst beds of *Chrysosplenium.*

The second full day was rounded off with a mind-boggling account by retiring President, Barry Thomas, of the modern prehistory of a previously unknown part of Africa. Amongst the giant lycopods and horsetails we all, I think, gained some insights into the importance of understanding the processes that formed fossil pteridophytes then and which are still operating now.

SATURDAY was extra special. More members had turned up on the Friday or Saturday. The voluminous Centenary Exhibition was ably assembled by Margo Ladell, Margaret Nimmo-Smith and co. in a wonderful period room. Everything from fern-embellished chamber pots to the wonderful photos of important BPS folk remained on show to the end of Wednesday, as did the living fern display at the entrance to the hotel. This consisted of Ray Smith's well-grown ferns, varying from *Adiantum reniforme, Osmunda regalis* 'Purpurescens' and *Polystichum setiferum* 'Smith's Narrow Form' to *Adiantum raddianum* 'Micropinnulum'. This was supplemented on Friday by fern species and varieties borrowed from Heaves Nursery which just happened to be next door to the hotel. It was gratifying to learn that this nursery had seen a good increase in its sales of ferns in the last three years. At 9 am, before the exhibition was officially open, Miss Emily Bolton, daughter of BPS founder member Thomas Bolton, arrived. Her sprightly and active 90 years allowed her easily to recall much in the life and times of her father and of the family's ferns, and she brought a wonderful selection of photographs, certificates etc. recording her father and grandfather and their great fern successes. One lovely observation was that the Boltons *'were fern mad, ferns were their god'.* Interestingly, and importantly, Miss Bolton's visit, which she obviously enjoyed, came about via Trevor Piearce's letter about the BPS week in the *Lancaster Guardian* – a reminder of the importance of advertising! At 11 am Robert Whiteside arrived and was warmly greeted by Emily, who had known Robert Whiteside senior. The 1892 membership cards of The Northern British Pteridological Society of both Robert Whiteside and Thomas Bolton were some of the many items of memorabilia on display commemorating these founder members.

The AGM was held from 2.15 pm, with around 50 members present. This is reported in detail elsewhere, so suffice it to say that the overall impression was of a vigorous, well run society, with impressive achievements during this Centenary year. Barry Thomas then spoke on 'Welsh Pteridology' – followed by some welcome refreshments, including the *very* beautifully and tastefully decorated Centenary cake made by Margaret Nimmo-Smith's sister-in-law, Molly Mallinson. By 7.30, seventy-six members had assembled in a fine room at the Woolpack Hotel, Kendal for the Centenary Celebration Dinner. This was a leisurely affair, entertainingly rounded off by guest speaker, Geoffrey Smith, Vice-President Clive Jermy, 'President Emeritus' Jimmy Dyce and our new President, Jack Bouckley. Everyone left feeling pleasantly smug about the achievements of the Society.

SUNDAY – With gathering shower clouds a party of *c.*60 made its way to Borrowdale, the first stop being at the Derwent House Hotel grounds, the former site of Askew's fern nursery (35/256176) by kind permission of Mrs D. Lopez, Mr Askew's granddaughter. Quite a few ferns from the nursery still survive in the grounds, including a huge bush-like *Dryopteris affinis* 'Grandiceps Askew'. *Athyrium filix-femina* 'Multifidum' and 'Corymbiferum', and a small form with pendulous pinna-lobes were also found; large fertile *Onoclea sensibilis* stood close to *Dryopteris oreades* 'Cristata Barnes'.

After coffee at Derwent House we walked through the village of Grange to Mrs Nan Hicks' garden, admiring en route stands of *Dryopteris oreades* along the roadside as well as the renowned colony of *Polypodium interjectum* 'Ramosum' on a wall. On arrival we were greeted by a very fine collection of vigorous ferns set off amongst a wide variety of shrubs and herbs. A large *Osmunda regalis* on gravel under a *Prunus* and well away from running or standing water perhaps told us something about the high rainfall of this area (about 100 inches/year). One *Polystichum munitum* was very fine with its 100+ fronds, as was *Dryopteris affinis* 'Angustata cristata' and a magnificently coloured *Athyrium niponicum* var. *pictum*.

After lunch at Grange, with the rain holding off, most of the party walked to or near the volcanic plug known as Castle Crag (35/249159). On the scree slopes of Gait Crag (opposite Castle Crag) the commonest plant turned out to be *Cryptogramma crispa*. Near the base of the scree were a few dozen *Asplenium septentrionale*, whilst on more stable scree *Pteridium* was common. A little higher up here, and on Castle Crag itself were found *Diphasiastrum alpinum, Huperzia selago, Asplenium trichomanes, A. ceterach* (in fissures), *Selaginella selaginoides, Dryopteris submontana, D. dilatata* and *D. oreades*. Needless to say, the over-optimistic target of the foray, *Asplenium* x *murbeckii*, eluded us. In the wooded approach to the crag *Hymenophyllum wilsonii* was found on vertical boulder faces by a stream, as well as *Gymnocarpium dryopteris* and *Oreopteris limbosperma*, with *Polypodium vulgare* as a frequent epiphyte in oak crotches.

In the afternoon most of the group visited the late Fred Jackson's garden in Stonethwaite, and that of Prof. and Mrs Ellwood, but Mary Gibby, with a group of three, peeled off to nearby Johnnys Wood. This lovely sloping, rocky, moss-rich wood with a *Dryopteris*-dominated ground flora yielded *D.* x *deweveri* as a new hybrid record here. Mary related that Fred Jackson had first pointed out the strange mixture of *Dryopteris* in the wood. *D. expansa, D. dilatata* and *D.* x *ambroseae* were all found in the short search period.

After the evening meal Martin Rickard entertained nearly 50 folk with an illustrated talk on fern gardens, in which a stunning *Dicksonia antarctica, Cyathea dealbata* and *C. medullaris* were shown in some Irish gardens, along with *Woodwardia, Microsorum scolopendrium* and many more.

MONDAY - A bright morning allowed for good viewing at 'Ferndene', Joseph Wiper's home in Kendal, where the very first meeting of the Society was held on 23 September 1891. This large garden, now belonging to Jeff and Ann Barnett, holds dozens of species and varieties, including many very fine large *Polystichum setiferum* varieties. Pride of place perhaps went to a magnificent 'Divisilobum' form. Near the spring-fed stream *Dryopteris filix-mas* 'Grandiceps Wills' grew well. Late morning saw us at and near Whitbarrow, en route admiring first a roadside bank with large *Asplenium trichomanes* subsp. *trichomanes* and *A. adiantum-nigrum* on it, and later *A. ceterach* on the walls of a lime kiln. Under Robert Sykes' guidance we visited two sites mentioned in Linton's *Ferns of the English Lake Country*. The first was the beautiful wild Park Wood (34/430871), on limestone and lush with *Gymnocarpium robertianum. Polystichum aculeatum, Asplenium scolopendrium, A. trichomanes,* good *Phegopteris connectilis, Dryopteris carthusiana, D. dilatata* and *D. filix-mas* were also present.

Drizzle had set in as we made our way from Witherslack Hall up Whitbarrow Scar Nature Reserve to examine the ferns on and near the broken glaciated limestone near Lords Seat (34/440870). In the grykes were *Asplenium trichomanes* subsp. *quadrivalens, A. ruta-muraria, A. scolopendrium, Dryopteris submontana, Gymnocarpium robertianum* and

Polypodium interjectum, forming attractive 'rock gardens' with *Mycellis muralis, Solidago, Thymus* and *Campanula rotundifolia*. A few little plants of *Asplenium trichomanes-ramosum* (= *A. viride*) were found amongst the loose broken limestone. Also present were *A. ceterach, Athyrium filix-femina, Dryopteris filix-mas* and *Cystopteris fragilis*. Despite the thick low cloud and drizzle we all met up at the trig. point; on our way back the rain stopped and the cloud lifted enough for us to see the extensive woodlands below us and, beyond, Morecambe Bay.

After dinner, slides of some of the places visited during our Society's first 100 years, including shots of many past and present personalities, were much enjoyed, ably introduced by Matt Busby.

On **TUESDAY**, 21 members made the 20 mile journey NE to Great Asby Scar in bright sunshine. At 35/664115 we met Terry Wells of English Nature, who introduced us to this large, almost Burren-like expanse of limestone pavement, now protected under a limestone pavement order. Members fanned out, and despite the buffetting winds and little sharp showers, everyone managed to stay on their feet and enjoy the fern-dominated grykes. The searched area (of about 1/3 of a square mile) yielded the following:- *Cystopteris fragilis* (abundant, found in nearly all grykes, many of them 1 ft or more long), *Asplenium ruta-muraria, A. trichomanes* subsp. *quadrivalens, A. scolopendrium, Athyrium filix-femina, Dryopteris submontana* (common, with blades to 1 ft 10 ins long) and excellent *Polystichum aculeatum*, including some *P. lonchitis* look-alikes. Perhaps most striking, to me at least, was the abundance of *Gymnocarpium robertianum*, many with blades to 10 ins and stipes to 2 ft long. In juxtaposition with the reddening leaves of their namesake *Geranium* the overall effect was magnificent. *Asplenium trichomanes-ramosum* (some forked examples too) was also quite common, as were *Dryopteris filix-mas* and *D. affinis* subsp. *affinis, A. ceterach* and *Pteridium aquilinum*. In the small, shallow, dry valleys *A. trichomanes-ramosum* was frequent amongst the broken limestone and in very short turf *Selaginella selaginoides* was spotted.

At 6.30 everyone was glued to the BBC TV *Look North* programme, awaiting coverage of our Centenary events. At 6.52 we were rewarded with a full four minutes, with stars Jimmy Dyce and Matt Busby and at least 20 ferns shown briefly but tastefully, all in the Barnett's garden during our Monday visit.

WEDNESDAY morning was spent by 34 members at Sizergh Castle (just half a mile from the hotel), where we were greeted and accompanied by Malcolm Hutcheson, the Head Gardener. Malcolm explained their policy of managed wild banks, one of which we were told contained good quantities of *Ophioglossum vulgatum* and the greater butterfly orchid, *Platanthera chloranthea*. Most of the ferns (many originally from Thomas Bolton's collection) had been brought together at the rock garden, which boasted at its centre large plants of *Osmunda gracilis*. The garden holds a National Collection of this genus, as well as of *Dryopteris, Cystopteris* and *Asplenium scolopendrium* varieties. A potted *Polystichum setiferum* 'Divisilobum plumosum' variety was much admired by Jimmy. It had very short almost deltate fronds. Along with this in the cold frames were a wealth of British and exotic gems.

After lunch at The Ship Inn, Arnside, John Mashiter's garden was visited after a gap of two years (see 1989 *Bulletin* write-up). John's 'garden on a limestone cliff' was packed with healthy ferns, including dense *Dryopteris cristata, D. remota*, a beautiful crisped *D. oreades*, beds of *Adiantum venustum*, and wonderful little patches of sporelings of 20 or more species and varieties planted out. The Cumbria Wildlife Trust's Grubbins

photo: M Gibby

Centenary field meeting visit to Sizergh Castle, Cumbria

Matt Busby, Ray Smith, Malcolm Hutcheson, Jimmy Dyce, Margaret Collins, Peter Edwards

Wood, which John wardens, was also visited; the *Asplenium scolopendrium* bank still looked good but due to dryness was not quite as lush as it could have been. Most of the 25 other pteridophyte species known there were found. On departing we could not help but admire again the four magnificent glossy and large *Asplenium marinum* plants in pots at John's front door.

Last, but not least, we visited Reginald Kaye's Waithman Nurseries at Silverdale. Reg was unable to be with us due to ill health but his son, Jeremy, welcomed and tended us as we lusted after the well known gems grown here. *Athyrium filix-femina* 'Plumosum superbum Druery' and *Asplenium scolopendrium* 'Crispum superbum' perhaps received the most admiration. As the last afternoon drew to a close the sun burst out just in time to bless a well deserved presentation to Matt Busby from all those attending the week. Back at the Heaves Hotel just 12 members remained to enjoy dinner together.

Everyone attending had obviously enjoyed the week, not least due to the efforts of the day organisers, Cynthia Kelsall, Mary Gibby, Matt Busby, Martin Rickard, Robert Sykes and Jack Bouckley and those who generously made their gardens available to us. The owners and staff of the Heaves Hotel had also made every effort on our behalf, giving us free and friendly reign over nearly the whole hotel and its grounds (two members camped there) and actually enjoying their sometimes eccentric guests. As Matt put it, we could not have wished for better accommodation. As for Matt himself, despite his worries, his organisation of the week went like clockwork, and to him most of all we all owe the biggest thank you for doing so much so well and making this a memorable and fitting last main event of our Centenary year.

REGIONAL MEETINGS 1991

WEST MIDLANDS

A R Busby

'Welcome to Spring' Flower Show, Knowle - 13-14 April. Once again, the Solihull Horticultural Society kindly provided space for us to display literature and plants explaining our Society's interests and activities. In addition, two classes for ferns were available to exhibitors, a class for one pot fern and a class for three pot ferns, any species or variety. The prize money was enhanced to mark our Society's Centenary, resulting in more ferns than usual being exhibited.

Ray and Rita Coughlin's Open Day - 2 June. Always a favourite venue with local members, we enjoyed the usual warm hospitality that Ray and Rita are noted for and brightened what would otherwise have been a chilly, gloomy day. With the garden looking at its best in preparation for the national tour due in July, Ray had been busy converting the framework of his old poly-tunnel into supports to carry various *Clematis* that will eventually provide colourful shade to the avenue of fern borders underneath. As usual, members brought along their surplus ferns to swap and most of us departed with some new treasure for our greenhouse or garden. Our thanks to Ray and Rita Coughlin for giving us such a memorable day.

Birmingham's Botanical Gardens - 1 September. It had been many years since the West Midland Group payed a visit to the Botanical gardens at Westbourne Road, Edgbaston and 'Winterbourne' in Edgbaston Park Road. The day began at Westbourne Road where many changes had taken place since our last visit. The indoor collection of ferns which includes the celebrated hybrid tree-fern, *Dicksonia* x *lathami,* and one or two *Nephrolepis* looked in very good condition in spite of a little scale infection. The outdoor collection of ferns is poor in spite of several large plants of *Osmunda regalis,* one or two *Athyrium filix-femina* varieties, *Dryopteris filix-mas, D. dilatata, Polystichum setiferum* 'Divisilobum' and several *Matteuccia struthiopteris.*

After lunch at the refurbished restaurant, we moved on to the University of Birmingham Botanic Garden, 'Winterbourne' in Edgbaston Park Road, Here, roles are reversed, for the indoor collection of ferns has been allowed to diminish, with pots of orchids slowly invading the fern house. The fern house, which is a small lean-to greenhouse with a bench down one side and the wall-side furnished with a limestone rockery from which a small water feature runs, is clothed with *Adiantum raddianum* and *Cyrtomium falcatum,* but the orchids are becoming dominant. However, outside things are looking much better thanks to the benevolence of Prof. J G Hawkes and the 'Friends of the Gardens' who have agreed to the siting and planting of a new hardy fern border in celebration of our Society's Centenary. The acquisition and planting of the new fern border has been supervised by Ray and Brenda Smith with the assistance of John and Margaret Collins. I know that the garden authorities are delighted with the results, even though planting is not yet finished and there are plans to enlarge the border.

Our visit to these gardens was blessed with sunshine and to bring the day to a close, Ray and Brenda Smith provided us with very welcome refreshments.

Midland Group for 1992. It is now eighteen years since the West Midland Group held its first meeting and over the years we have become aware of the increasing support we have received from the members in the East Midlands, so I have decided that, in future, we shall consider ourselves as the Midland Group in the hope that it will encourage more members outside the West Midlands to join our activities.

LEEDS & DISTRICT

Jack Bouckley

Wentworth Castle, Barnsley, South Yorkshire - 29 June. Our first group trip of the year, led by Jack Bouckley, was to Wentworth Castle near Barnsley which is owned by Barnsley Council. It is now the site of Northern College, whose administrators had asked us to do a field study around the grounds to identify the various ferns which are growing among the many hundreds of rhododendron bushes. It is quite obvious that many of the ferns have been planted as there are quite a lot of varieties such as *Dryopteris affinis* 'The King', along with *Adiantum pedatum, Matteuccia struthiopteris* and *Blechnum penna-marina.* The native fern species found were *Asplenium trichomanes* subsp. *quadrivalens, A. scolopendrium, Athyrium filix-femina, Dryopteris dilatata, D. filix-mas, Polystichum aculeatum* and *P. setiferum.*

Condenser Wood, Keld Heads and Cobscar, Wensleydale, North Yorkshire - 20 July. In woods once echoing to the sounds of industry, a party of seven was guided by Richard Lamb to discover what pteridological delights awaited them. The area is indeed aptly named: keld means spring, and the Condenser Pond dates from the last century when the lead industry flourished, and the Stokoe Condenser of the Keld Head Mining Company was heralded as the latest state of the art in removing valuable lead from the smelter fume. Alas, now all is ruinous and overgrown in woods untouched for many years, but still showing evidence of coppicing amidst the remains of dams, watercourses, smelter flues, and the now-demolished twentieth century aerial ropeway for taking stone across the site to the old railway sidings in the valley below.

It was not as wet and slippery as it could have been thanks to the dry weather, and the 'usual' woodland ferns (male, lady and broad buckler) were soon found, together with bracken and two subspecies of *Dryopteris affinis: borreri* and *affinis.* Condenser Pond, still well filled with water after over a century of disuse, yielded two species of *Equisetum, E. sylvaticum* and *E. palustre,* which proved very difficult to identify. Despite numerous old structures containing mortar, virtually no wall ferns were seen apart from *Asplenium trichomanes* in a boundary wall by the roadside, and *Cystopteris fragilis* growing on the old smelter itself, now almost covered by quarry debris, but still exhibiting a rather spectacular culvert taking the main stream underneath the building in a roaring cascade of water. The whole area is attractive to both industrial archaeologist and botanist alike, being especially noted for a profusion of wild flowers, thus worth visiting at different times of the year.

After lunch the party ventured on to the open moorland, walking up to Cobscar smelting mill at nearly 1200 feet a.s.l., affording superb views over the main and southern tributary dales. Several of the same species were found here, with the addition of *A. scolopendrium* growing in a picturesque adit (entrance to a mine) surrounded by the delicate fronds of *Cystopteris,* and a single *Polystichum setiferum* on a spoil tip. The highlight of the afternoon, however, was a third horsetail, later identified as *E. fluviatile,* luxuriating in another relic of bygone industrialisation, a splendid reservoir now home for water birds including the black-headed gull.

The empty quarry, once supplying stone via the defunct ropeway, was the final and unplanned venue, resulting in the discovery of two ferns normally found in walls, *Asplenium ruta-muraria* and *A. trichomanes,* growing attractively in the limestone.

Once again, a marvellous day out, in three very different habitats; it is to be regretted that attendance was not greater.

Great Woods and Shipley Woods, Barnard Castle, Durham - 10 August. Richard Unett led us on this trip to Shipley Woods and Great Wood, along the Tees valley north of Barnard Castle. Both of the areas are in a very steep-sided valley and in a Site of Special Scientific Interest. The owners had been approached for permission to enter these strictly private sites and both had willingly agreed, in fact the farmer who owns the Shipley Woods had even cut a way through some very thick and difficult undergrowth to make our entrance much easier. In the morning we decided to 'do' the Great Woods, where we had been warned by the owner that the going could be quite dangerous as the very boggy areas were quite deep in places and care had to be taken to avoid the waist-deep sections. No-one came to any harm and our list of finds was *Asplenium ruta-muraria* (outside the entrance), *Athyrium filix-femina, Dryopteris affinis* subsp. *borreri, D. carthusiana, D. dilatata, D. filix-mas, Equisetum sylvaticum* and *E. telmateia.*

We had our pub-grub in the local village and then went to the second site. We parked our cars in the farmyard and then got down into the Shipley Woods which did not have many ferns but was very interesting. The ferns in this part were *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* including subsp. *borreri, D. carthusiana, D. dilatata, D. filix-mas, Oreopteris limbosperma, Polypodium interjectum, P. vulgare* and *Polystichum aculeatum.*

In the evening we called at another site which is strictly private, where a very large planting of lady ferns had been made many years ago. Most of the few thousand plants were green- and red-stemmed but there were also one or two varieties.

Indoor Meeting and Centenary Celebration - 7 September. Twenty-seven of us met in the Study Centre at Harlow Carr Botanical Gardens to hear two lectures, the first one being given by Dr Mary Gibby whose subject was 'Ferns down the microscope'. We were told about the uses and activities of chromosomes and then what happens at mitosis. A very fascinating lecture it was and it caused a lot of interest, with a lively question time. After this, Clive Jermy gave an illustrated talk about 'Fern gardens round the world'. This too was very well received as we went for what seemed to be a conducted tour round these ferny places as we sat in the coolness of the building. These talks were followed by an amble round the gardens of the Northern Horticultural Society.

In the evening we all assembled again, this time at the Garden Room Restaurant for a celebration dinner. Before the meal, Jack Bouckley read out a poem: 'Ferns', by Ida Holmes-Moss, which appeared in the 1982 Bulletin (p. 217) and to which a further verse had been added. This led up to the entrance of Gavin Stark carrying a large *Asplenium scolopendrium* 'Crispum', piped in by James Merryweather to the tune 'Allez à les fougères' or, in English, 'Let's to the ferns'. After wining and dining well and when the toasts and speeches were over, James brought the evening to a close with another tune on his pipes called 'Cutting Bracken'.

All round we have had a very successful year and we are now looking forward to 1992.

WESSEX

Wye Valley - 21 April. The car park on the A466 between Chepstow and Tintern Parva where members gathered was blessed with a small epiphytic *Dryopteris* growing on an old yew tree. Although we were led past an abundance of woodland ferns *(Dryopteris affinis* agg., *D. dilatata, D. filix-mas* and *Asplenium scolopendrium)* the limestone was particularly naked of the limestone wall ferns which we felt could so easily have been there. An old herbarium record of *Asplenium trichomanes* subsp. *pachyrachis* in the parish of St Arvans was used by Martin Rickard as our clue. However, the maidenhair spleenwort proved as elusive as all the others in this locality. One plant of black spleenwort was found.

Success was assured after lunch when Martin led us to the Biblins, where the subspecies *pachyrachis* was present in some abundance growing on the moist limestone cliffside. The hybrid between subsp. *pachyrachis* and subsp. *quadrivalens* was also present, nothosubsp. *staufferi*. Thanks are due again to Martin for explaining and re-explaining the subtle and delicate differences.

Martin Cragg-Barber

New Forest - 6 July. Glorious weather was waiting for non-members and members meeting at the Shave Wood car park in the New Forest. A good-humoured seed of self-doubt and confusion was sown in all visitors when Paul Bowman, the leader, showed us a splendid mown carpet of *Equisetum arvense*. Finally we edged our way along the grass verge of a busy main road (past a basking common lizard and slow-worm) to where the main stand of *Equisetum* x *bowmanii* was spreading quietly. It is a most beautiful plant with the secondary branching of *E. sylvaticum*, and where it has spread into the wood behind the road verge it attains a height of one metre.

After lunch, a similar roadside verge gave us scope to explore the common ground between *E. arvense* and *E. fluviatile* but their hybrid failed to reveal itself with certainty, despite much crushing of stem internodes and thumbing through Page's pages. Happily we then moved on to Emery Down (which Steve Munyard had typically visited earlier in the day) and were rewarded with a fine stand of *Phegopteris connectilis* beneath some mature alder by a stream. Not gainsaying completely its common name, the moist mound where the fern was growing also hosted a number of beech seedlings.

It was a particular pleasure to be shown the horsetail hybrid by Paul Bowman since he himself had discovered it and suspected its hybrid status.

Martin Cragg-Barber

Forest of Dean - 4 August. The walk from Cannop Ponds through Wimberry Slade across the top of Bixslade, a detour into Spion Kop and back to the ponds must be the ferniest six miles in the Dean. No rarities, five or six plants of *Gymnocarpium dryopteris* hanging on in the Gloucestershire Trust for Nature Conservation reserve, fossil pinnae, black chemical impressions in a narrow bed of shale in a corner of a Bixhead Quarry, polypodies on pennant sandstone, (perhaps *P. vulgare*), and the *Asplenium trichomanes* in Spion Kop must be subsp. *trichomanes*.

The walk was guided by Bob Godfrey as a change from working on a 200-year plan to renew the oak woods. He must have found our efforts to reconcile the *BM Fern Crib*, Page's *The Ferns of Britain and Ireland* and the new *Illustrated Field Guide to Ferns and Allied Plants of the British Isles*, to the *D. affinis* on the ground most strange. It took another day-long visit to sort out the morphotypes, of which *affinis*, *borreri* and *cambrensis* are all present (the *borreri* in quantity and variety). Perhaps the others are there as well; we will have to continue the search next year.

Jim Jarvis

Two Gloucestershire Woods - 1 September. Midger Reserve (Gloucestershire Trust) is on the western escarpment at the southern end of the Cotswolds and features ancient woodland and limestone grassland. There are not many fern species or ferns but there are some interesting microhabitats: polypodies confined entirely to trees and fallen logs and *Dryopteris dilatata* isolated on moss-covered tree stumps, moist acidic havens in a waste of dry limestone brash under scrub ash. Much of the woodland was felled in the 1950s and much was maintained as coppice which explains the shortage of ferns but there are large areas on the spring line over Fullers earth which are permanently damp where the absence of ferns is most puzzling. Most of the ferns are confined to a narrow strip on either side of the stream and many are so localised they appear to have been planted. The only specimens of note were some scattered *Dryopteris filix-mas* where the undersides of the stipe, rachis and pinna are dark, much the same colour as the spot in *D. affinis*.

Having walked a circular trail through the reserve, in the afternoon we moved north of the escarpment to Coaley Wood (NT and private). Tired young legs restricted our walk to a descent to a small colony of *Blechnum spicant* on Fullers clay below 200 feet of chalk. Clear felling, natural regeneration, thinning and opening up the Cotswold Way have all been detrimental to the fern population. The areas where there has been any significant recovery of the fern population are all on the spring line north-west facing, under well-spaced ash with a continuous canopy. The distribution of ferns in both woods will be worthy of long term study because it will highlight the consequences of different woodland management strategies on an important part of the ground flora, management which appears to be biased in favour of flowering plants.

Jim Jarvis

SOUTH-EAST

Fern Leaf Workshop, Whitelands College, London - 13 April. This meeting was the latest in a series of laboratory workshop meetings, aimed at introducing members to the botanical aspects of ferns. It used the excellent facilities of Whitelands College, where the meeting leader, Jennifer Ide, is a lecturer.

Jennifer opened the meeting by explaining basic leaf structures and their place in the evolution of plants. The purpose of leaves - photosynthesis, water regulation, and (with stems) water and nutrient transport - was explained to us, together with the significance of the macro- and microscopic structures. It is a tribute to Jennifer's knowledge and ability as a lecturer that we were thoroughly fascinated for at least an hour and a half!

In the afternoon we were able to examine a good variety of fern and *Equisetum* species under the microscope. The stem structures were revealed in intimate detail. In particular the remarkable differences between water-transporting tissues (xylem, with specialised cells such as tracheids, and inanimate, lignified tubes in some cases) and nutrient-bearing phloem could be clearly seen. We were also able to examine the extraordinary beauty of some of the stem and leaf hairs even on plants as mundane as bracken. We gained some practice at cutting sections, with varying degrees of success!, enabling us to see stomata (leaf pores) with their controlling guard-cells, and the difference between the upper and lower parts of the leaf itself. Particularly interesting were the storage/heat-insulating cells of the hypodermis of ferns regularly exposed to higher sunlight levels.

Knowledge of fern structure, and its evolutionary and functional significance, is essential to species recognition. We were treated to a remarkable educational 'tour de force' on the part of Jennifer Ide. I was disappointed that more members were not able to benefit from a fascinating and rewarding day.

Paul Ripley

photo: J Ide

Margaret Harris, Patrick Acock, Paul Ripley and Steve Munyard examine leaf structures at a South-east regional group workshop, Whitelands College, London

Hever Castle, Edenbridge & Emmetts, Ide Hill, nr. Sevenoaks, Kent - 26 May. The SE Group met at Hever Castle and while hoping for more to join us observed some fine *Asplenium adiantum-nigrum* in the old mortar of the gatehouse. Around the rock gardens some minor variation in the *Athyrium filix-femina* was noted. Some fine ferns were observed in an area with water cascading over a wall. Ferns seemed to grow naturally in the walled gardens with polypods on the rose pillars and *Cystopteris fragilis* in the mortar around these walls and by the lakeside. We are sure many ferns would naturalise themselves at Hever given the chance.

We returned to the National Trust garden at Emmetts in the afternoon, having missed the gardens in the spring of 1988 after The Storm. Geoffrey Kitchener and his family helped to swell the numbers. The early highlight was several clumps of *Osmunda claytoniana* with their fertile fronds just dehiscing. I think some spores may have found their way into a few envelopes one member happened by chance to have in his pocket. On a natural bank beyond the garden we re-discovered fine specimens of *Polystichum setiferum, Dryopteris filix-mas, D. dilatata, Athyrium filix-femina* and added a fine clump of *Dryopteris affinis* morphotype *affinis*.

It is only to be regretted that more people in the SE do not avail themselves of these meetings which Paul spends so much time researching. Please try to attend some of the regional meetings in your area next year. It is sure to encourage the small band of members who spend so much of their time preparing them for you.

Pat Acock

Hurtwood and Wotton Commons, nr. Leith Hill, Surrey - 29 June. An encouragingly good number (12) of members met at the Hurtwood Control Car Park, on the edge of Leith Hill, on one of the few fine days of the early 1991 summer. We were particularly pleased to welcome Dania Kowalska and her father, and Russell Ness, who later showed some of us where to find star-fruit growing wild in deepest Surrey! After a short look at Pitch Hill, with its superb views of the Surrey/Sussex weald, Coneyhurst Gill (51/082407) was visited. A few specimens of *Asplenium scolopendrium* and *Polystichum setiferum* were seen on the footpath leading to the Gill. Apart from some fine *Athyrium, Dryopteris affinis* subspecies were examined, in addition to *D. filix-mas. D. affinis* morphotype *borreri* was seen, possibly *affinis*, and a luxuriant specimen which might have been *paleaceo-lobata* (we need more practice here).

We lunched at the Windmill pub, again with superb views (steak and mushrooms with a view?), and set off towards Friday Street in the afternoon. On the walk through the ubiquitous and abundant bracken, we began to see *D. carthusiana* in typical form. However, in the scrubby-wooded, boggy head-waters of the Tillingbourne stream, very large numbers of exceptionally large specimens were examined. About twice as large as typical *D. carthusiana*, and with gingery concolorous scales and intermediate morphology, these may well have been the hybrid *D.* x *deweveri*. It did not completely resemble the hybrid seen elsewhere, and the sheer abundance of the plants was confusing. This fascinating area merits further study. *D. dilatata* was present, but even in drier places, *D. carthusiana* was often the dominant plant. Spores were not ripe and could not be examined. Apart from occasional *D. affinis, Blechnum spicant* was common, as were large luxuriant plants of *Athyrium filix-femina*. This whole area was full of interest and deserves revisiting.

I would like to thank our hosts, Graham Ackers and Lesley Williams, for a well-researched and fascinating day; and not the least for a superb tea afterwards. To relax in Graham and Lesley's charming garden completed a thoroughly enjoyable day.

Paul Ripley

13 Star Lane, St Mary Cray, Orpington, Kent - 9 November. Eleven members met at 3.30 pm at Patrick Acock's house for an entertaining miscellany of fern interest. We saw Jennifer Ide's slides of some of the BPS Centenary events, in particular of the Garden Tour which followed the Centenary Symposium. We envied those who had gone on the very full, and obviously highly organised tour.

Graham Ackers and Lesley Williams had just returned from a trip to Madeira and Tenerife. They showed us a comprehensive collection of slides from these fascinating and fern-rich islands - especially Madeira with its network of levadas. Many species are endemic to these islands, and most of these species were shown in excellent slides. Graham and Lesley had also brought a small selection of some of the more common species which we were able to see growing in pots.

After a superb tea - nay, meal - generously provided by Pat Acock, Anthony Pigott explained to us the latest situation with the *Dryopteris affinis* complex. With the aid of wonderfully representative fronds, and a detailed summary of individual features, we were able to see clearly the obvious divisions between morphotypes and parent species. We were introduced to two new morphotypes - *'convexa'* and *'insolens'* - obviously distinct, and the genetic relationships were carefully explained. We all await the time when chromosome analysis enables us to clearly set species as distinct from subspecies or mere varieties.

The meeting finished with some slides of the Skye meeting, a showing of the video of the *Gardeners' World* programme which featured Martin Rickard's garden, a repeat showing of the BPS video, and, from Jennifer Ide, the superb *Equisetum* video, with its remarkable time-lapse photography.

Paul Ripley

EAST ANGLIA

Bernard Williams

Fingringhoe Wick Nature Reserve, Colchester, Essex - 20 July. Eighteen members and friends travelled long distances to give enthusiastic support, including Nancy Swell from Virginia, USA. The Warden, Laurie Forsyth conducted our party around the reserve equipped with a scythe to make our way easier through the undergrowth in what was a former quarry. *Dryopteris filix-mas, D. dilatata, Pteridium aquilinum* and *Polypodium vulgare* were soon observed. *Dryopteris affinis* subsp. *affinis* and subsp. *borreri* were tracked down still thriving in impenetrable hollows. The warden led us to a low lying site where we viewed a solitary plant of *Osmunda regalis* whose presence on the reserve has always been a mystery. *Dryopteris carthusiana* was found nearby and one plant which was thought possibly to be the hybrid *D.* x *deweveri*; subsequent laboratory examination showed this not to be so. *Athyrium filix-femina* and *Asplenium scolopendrium* were also present but the only other find of note was a good colony of *Ophioglossum vulgatum* which some members saw before lunch. Unfortunately the sole plant of *Blechnum spicant* was found to be dead.

The group enjoyed a picnic lunch before going to the delightful cottage garden of Miss Vivien Green at Aldham. After welcoming drinks we explored her excellent collection of hardy ferns, many grown from spores and including some choice varieties. Vivien had a selection of ferns and plants for sale in aid of the Red Cross Society. Afterwards, we made our way to Birdbrook, to visit the garden of Mr and Mrs Robert Bolton. Robert still has an impressive number of ferns from the Bolton collection which are now planted out in the garden and thriving, but he has also given many to Martin Rickard for future preservation. It was too early to see the polypodies at their best, but many other choice varieties of ferns were seen. An excellent tea concluded a worthwhile day spent in good company.

This was our only meeting during 1991 but it is hoped to organise more in 1992.

OBITUARIES

HENRY L SCHOLLICK

We regret to announce the death of Henry Schollick, our President in the years 1972-75, who died on 27 May 1991.

Henry was a director in the publishing firm of Blackwells in Oxford and was an enthusiastic collector of fern books, possessing probably the finest private collection in the country, which contained many exceedingly valuable volumes. A visit to his library was always impressive and exciting and many of us value books gifted to us from it.

He joined our Society in 1968 and from the beginning became very active in our affairs, joining in all our activities indoors and in the field. He was a keen supporter of our stand at the Southport Flower Show and on the one occasion we persuaded him to exhibit he carried off most of the prizes in all the classes. He had a large and very fine collection of fern varieties and was always most generous in giving away plants during visits by the Society to his large garden on the outskirts of Oxford. Those visits were always looked forward to by the large number of members who attended and were entertained royally by our host and his wife.

When Reginald Kay's book, *Hardy Ferns,* published in 1968, ceased publication, Henry negotiated with the publishers, Faber and Faber, for the free gift to the Society of all the remaining unbound material, amounting to almost 1000 copies. These were bound for us by Faber's binding firm. We gave 100 copies to the author, and only now have we finished selling the remaining stock through BPS Booksales. The proceeds have been a valuable addition to our funds over many years, and all thanks to the good offices of Henry Schollick.

In recent years Henry had dropped out of active participation in our affairs but he will long be remembered by many of us for his unfailing genial presence and generosity.

He is survived by his wife, Peggy, and a son and daughter. To them we extend our deepest sympathy.

Jimmy Dyce

WILLIAM ARTHUR SLEDGE 1904 - 1991

Dr Arthur Sledge, who died on 15th December, was born in Leeds on 14th February 1904. He attended Leeds Grammar School and whilst still a pupil there attended courses put on by the then Department of Botany of the University of Leeds. Thus began an association of more than sixty-five years with this institution. He gained his BSc degree with honours in Botany in 1926 and his PhD two years later. In October 1928 he was appointed demonstrator in botany and he rose steadily through the ranks to become a senior lecturer in 1954. Even after his retirement in 1969, his loyalty to and interest in the department and in his research were such that he stayed on for a further twenty-one years, first as an honorary research fellow and then as an honorary lecturer. Following increasing ill-health, he finally gave up his work at the university a year ago.

Dr Sledge was an excellent teacher who, over the years, gave many different courses, and he will be remembered with affection and regard by generations of botany students as well as by the many local naturalists who came into contact with him. Although his research work was on the taxonomy of tropical ferns, Dr Sledge was far from being a narrow fern specialist. He was a renowned field botanist with an intimate knowledge of the local flora. He was an active member of the Yorkshire Naturalists' Union (which he joined in 1920) and he edited their journal, *The Naturalist*, for thirty-two years, building up a publication of considerable merit and standing. He was also a member of the Botanical Society of the British Isles (formerly The Botanical Exchange Club) from 1924, later acting as its editor and distributor and becoming Recorder for south-east, south-west and mid-west Yorkshire in 1949, a job he finally relinquished in 1987, the same year in which he was made an honorary member of the BSBI in recognition of his service to Yorkshire botany and to the editorial work of the society. He had high standards and was a precise and meticulous worker, qualities which made his editorship and research so notable. His publications were respected for their careful work and considered comment. His care and neatness were nowhere so apparent as in his herbarium. His specimens, of both flowering plants and ferns, were a delight to behold: beautifully pressed to show all the relevant parts and bearing informative and detailed labels. Many collectors could learn much from a study of his specimens. Methodical as always, he disposed of his fine herbarium in several different directions before his final retirement. His herbarium of Yorkshire plants is deposited in Cliff Castle at Keighley; his continental collections are deposited in the Institut für systematische Botanik at Zürich and in the National Museum of Wales at Cardiff. His fern specimens are preserved in The Natural History Museum (BM) and Kew, with further collections at Edinburgh, Cardiff, Oxford, Cambridge and in the Smithsonian Institution at Washington.

His unparalleled local botanical knowledge led to the publication, with C A Cheetham, of *A Supplement to the Yorkshire Floras* in 1941. He did not restrict himself to the Yorkshire flora, however. In addition to organizing, leading and participating in local field trips and excursions, both with students of the Leeds Botany Department and local naturalists' groups, he travelled throughout Britain and the continent, always interested in botany whether he was on holiday or on a field course. After an early visit to New Zealand, he travelled and collected widely in Europe. He participated in the Leeds University expeditions to Madeira (1949) and to Ceylon (Christmas 1950-51), the latter culminating in the publication of the now classic research work on the fern flora of Ceylon (Manton & Sledge, 1954). In 1965 he spent a sabbatical in Samoa, collecting and studying ferns from there and from other Pacific islands which he visited on the return journey.

He joined the British Pteridological Society in 1965, and published several articles in *The Fern Gazette*. He went to the inaugural meeting of the Leeds and District Fern Group in January 1984 and was an active supporter thereafter, being an enthusiastic attender at local meetings and participating in, leading, and advising on field excursions. His first publications were not on ferns but were, not surprisingly, articles on the botany of West Yorkshire, prepared, whilst he was still a student, for the handbook issued for the British Association meeting in Leeds in 1927. His early research considered the rooting of cuttings from an anatomical perspective but his love of plants and his interest in taxonomy and systematics soon became apparent in a series of articles on various taxa, published in *The Naturalist*. Also manifest in his writing is his interest in ecology, perhaps stimulated by his colleague at Leeds, W H Pearsall. His main research was in tropical fern taxonomy, an interest which developed from his visit to Ceylon. His papers, published mostly in *Kew Bulletin* and the *Bulletin of the British Museum (Natural History)*, are characterized by his sound critical judgement and good taxonomic sense. It is also noteworthy that he did not restrict himself to a study of one group, but had a wide-ranging interest covering a number of different families and genera, from the Osmundaceae and Hymenophyllaceae to the Dryopteridaceae and Polypodiaceae.

I got to know him well only after he retired, and I used to enjoy going up to his room for a chat or to seek advice. He was usually to be found working away on an article, studying herbarium specimens or dealing with correspondence, whilst drawing on his pipe and listening to the cricket commentary. He came in to work every day, rain or shine, and regardless of increasing frailty in the last few years. Despite two heart attacks he still insisted on struggling up to his room on the top floor with great determination and his fortitude was much admired. A quiet and modest man, he was perhaps rather overshadowed by the more flamboyant personality of Manton. His contribution both to fern research and to the botany of Yorkshire is, however, a major one, and he will long be remembered as a great teacher, taxonomist and field botanist par excellence.

He leaves a wife, Marjorie, and a son and grandchildren and to them all we tender our sympathy in their loss.

Anne Sleep

MEMBERSHIP LIST: ADDITIONS AND AMENDMENTS

NEW MEMBERS

1990

MASKEW, Mr R, Coppice House, Baunalls Lane, Stoke Bliss, Tenbury Wells, Worcs. WR15 8RZ

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1992

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MEETINGS 1992

Meetings Secretary: A C Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P J Acock, N J Hards, J M Ide, A C Pigott, P H Ripley

Sat 7 March - **Spring Indoor Meeting - Derby**
Location: Derby Lonsdale College of Education, Derby
Leader: Nick Hards Time: 11.00

Sat 30 May - **Day Indoor Meeting - Kew**
Location: Royal Botanic Gardens, Kew, Surrey
Leaders: Bob Johns/Peter Edwards Time: 11.00

Fri eve 24 - Sun 26 July - **Weekend Field Meeting - Hampshire**
Leader: Andrew Leonard
Centre: The New Forest Inn, Lyndhurst
Time: 19.30 Friday eve, 09.30 following mornings

Thurs eve 30 July - Sun 2 August **Long Weekend Field Meeting - Moffat, Scotland**
Leader: Paul Ripley
Centre: Balmoral Hotel, High Street, Moffat
Time: 19.30 Thursday eve, 09.30 following mornings

c. Tues 17-Mon 23 August - **Week Field Meeting - North Spain**
Leaders: Ronnie Viane & Patrick Acock

NB: *Please contact P Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ immediately if you are interested in this meeting so hotel can be booked and exact dates confirmed.*

Thurs 20 - Sat 22 August - **Southport Flower Show: BPS Stand**
Further Info: Matt Busby

Wed 23 eve-Sun 27 Sept - **Long Weekend Field Meeting - North Devon**
Leader: Peter Boyd
Centre: Sandy Cove Hotel, Combe Martin Bay, Berrynarbor, Ilfracombe, Devon
Time: 19.30 Wednesday eve, 09.30 following mornings

Sat 17 October - **Annual General Meeting & Autumn Indoor Meeting - London**
Location: Chelsea Physic Garden, 66 Royal Hospital Road, London
Leader: Jennifer Ide Time: 11.00

For full details of these meetings, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

REGIONAL MEETINGS

For details of additional meetings in the following areas, please contact the reigonal organisers, enclosing a stamped addressed envelope.

Wessex	M J Cragg-Barber, 1 Station Cottages, Hullavington, Chippenham, Wilts. SN14 6ET
Midlands	A R Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD
Leeds & District	J H Bouckley, 209 Woodfield Road, Harrogate, Yorks. HG1 4JE
South-East England	P H Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia	B Williams, 20 Melbourne Court, Welwyn Garden City, Herts. AL8 6LL

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20th, 21st, 22nd AUGUST 1992

Schedules and further information from:
The Flower Show Secretary
44 Hoghton Street, Southport, Merseyside PR9 0PQ

The British Pteridological Society
BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 4 NUMBER 3

1992

Edited by A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY
Officers and Committee for 1992

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Dr T.G. Walker, J.R. Woodhams

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Plant Exchange Organiser: Mrs R. Hibbs,
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Booksales Organiser: S.J. Munyard, 234 Harold Road, Hastings, East Sussex, TN35 5NG

Trustees of Greenfield and Centenary Funds: J.H. Bouckley, A.R. Busby, Dr N.J. Hards

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £12.50, Personal Members not receiving the *Fern Gazette* £9.50; Student Members £7; Subscribing Institutions £20. Family membership in any category is an additional £2. Applications for membership should be sent to the Membership Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £3 extra to cover bank conversion charges). Airmail postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: *Athyrium filix-femina* (Grandiceps group) raised by Reg Kaye. Published in the *Pteridologist* **1**(2): 68, 1985, as *A. filix-femina* 'Crispum Grandiceps Kaye'.)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 4 **1992** **No. 3**

SECRETARIAL NOTES

ANNUAL GENERAL MEETING 1993, PRELIMINARY NOTICE - The 90th AGM will take place on Saturday 16 October 1993 in the Gilmour Building, Cambridge University Botanic Garden, Bateman Street, Cambridge, at 2.15 p.m. A street guide to assist in finding the venue is available from the General Secretary. Please enclose an S.A.E.

COMMITTEE VACANCIES - In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1993. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 5 September 1993.

SUBSCRIPTIONS 1993 - Members are reminded that subscriptions for 1993 are due on the 1st January 1993 and should be paid to the Membership Secretary, British Pteridological Society, C/o Dept. of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL - Our journals can be sent by airmail to overseas members, provided they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY - Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. There are two transferable tickets available for all RHS Shows other than the Chelsea Flower Show. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLES - The Society operates a reading circle for several journals. The *American Fern Journal* is a quarterly publication containing much information for those seriously interested in ferns; it is accompanied by the *Fiddlehead Forum*, which publishes many 'ferny' items of interest to the amateur grower. The Royal Horticultural Society's journal, *The Garden*, is published monthly. To receive any of these journals apply to the General Secretary.

THE GREENFIELD FUND - This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society's publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

THE CENTENARY FUND - This fund will be used to promote the study of all aspects of pteridophytes - horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to avail themselves of this fund should contact the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS - These are such good value that it is a wonder that more people do not avail themselves of them. Most issues of the *Bulletin* and all of the *Pteridologist* are available, but only odd parts of the *Fern Gazette* are now available prior to volume 7 and some parts are sold out even to volume 10. Please send for a list if you are interested. A bumper bundle of older parts of the *Fern Gazette* is still available, post included, at £6.

For all information regarding back numbers, please contact Patrick Acock, 13 Star Lane, St. Mary Cray, Kent, BR5 3LJ.

BINDERS for the BPS BULLETIN and PTERIDOLOGIST - Binders for volumes of the BPS *Bulletin* and *Pteridologist* are available from the General Secretary. The *Bulletin* binders are attractively produced with red hardboard covers and gold blocked lettering on the spine: only £5 each, including postage and packing. Binders for the *Pteridologist* have mustard hardboards and gold blocked lettering on the spine. Each binder holds one volume (six parts). £5 each including postage and packing. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A.R. Busby.

BPS VIDEO "BRITISH FERNS"

With over fifty species of ferns the British Isles has a remarkably varied fern flora. Many species have distinctive distributions reflecting regional variations in environmental conditions. In particular the cool relatively damp environments of the North and the mild Western fringes of Britain bring together species typical of Atlantic, Arctic and Alpine regions, resulting in a fern flora that is unique to the British Isles.

This twenty-five minute video shows most of our native ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

The video has been funded by Schering Agriculture and the National Museum of Wales. It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

GRAND 'BRING AND BUY' FERN SALE - A feature of the 1993 Annual General Meeting will be a 'bring and buy' fern sale. All proceeds will go towards off-setting the cost of holding the AGM at Cambridge.

ANNUAL GENERAL MEETING 1992

MINUTES of the 89th ANNUAL GENERAL MEETING held at the Chelsea Physic Garden, 66 Royal Hospital Road, London at 2.15 p.m.

IN THE CHAIR: The President, Mr J.H. Bouckley.

PRESENT: R.G. Ackers, P.J. Acock, G.H. Bentley, P.D.A. Boyd, A.R. Busby, P.J. Clare, R. Cooke, R.V. & R.C. Coughlin, J.A. Crabbe, M.J., L.I. & T. Craddock, A.J. Dickman, A.F. Dyer, D. Fortune, J. & M. Garstang, M. Gibby, P. Glaves, N.J. Hards, G.K. Hoare, D.M. Holly, J.M. Ide, A.C. & A. Jermy, B. Kohler, D. Kowalska, M. Ladell, A.M. Leonard, S.J. & K. Munyard, M.E. Nimmo-Smith, A.H. Ogden, A.M. Paul, A.C. Pigott, C.A. Raine, M.H. Rickard, P.H. Ripley, Mr & Mrs F. Rumsey, N.R. Schroder, E. Sheffield, R.J. & B. Smith, G. Stark, I.N.J. Storey, R.N. Timm, J. Vogel, O. Walker, J.E. Walsh, S.L. Williams, J.R. Woodhams, C.M. Wyndham.

ITEM 1 - APOLOGIES FOR ABSENCE: J.M. Camus, J.W. Dyce, R. Hibbs, R.J. Murphy, B.A. Thomas.

ITEM 2 - APPROVAL OF MINUTES: The Minutes of the 88th AGM held on 21st September 1991 had been published in the 1991 Bulletin and were approved by the Meeting.

ITEM 3 - MATTERS ARISING FROM THE MINUTES: There were none.

ITEM 4 - HONORARY GENERAL SECRETARY'S REPORT: I am pleased to report another successful year and the Society continues to benefit from the foundations laid during our Centenary Year. This is reflected in the continued gain of new members: however, we cannot afford to rest, nor should we expect our past successes to bring benefits without continued effort. The momentum we have gained must be maintained. Members can play their part by encouraging an interest in ferns and fern growing amongst their friends and colleagues.

MEMBERSHIP: We have gained a further 106 new members this year, bringing the membership total to 783. This is the first time that we have gained over 100 new members two years running. I believe this to be further evidence of the continued benefits from our Centenary Year. Deaths and resignations account for a small number of losses. This would seem to indicate a general feeling of satisfaction amongst the membership; however, the Officers and Committee rely on feed-back from the members so that we can continue to provide and improve the benefits to members.

MEETINGS 1992: Meetings continue to be well supported, with very satisfactory numbers attending all meetings. We do tend to get the same faces at field meetings and as much as we look forward to the cameraderie of well known friends, we are always pleased to see new faces.

REGIONAL GROUPS: A first step to making friends in the Society is by supporting your local group if you are fortunate enough to live in an area covered by one. We still have several areas without regional groups and we are always anxious to encourage members to form them.

PLANT AND SPORE EXCHANGE SCHEMES: These continue to prove very successful. The Plant Exchange list recently received from the organiser, Rosemary Hibbs, contains 53 species and varieties offered by nine donors. Rosemary is always keen to have more donors and to extend the number of members receiving the list. You do not have to have ferns to offer in order to take advantage of the scheme.

Margaret Nimmo-Smith continues to have a very popular and successful Spore Exchange Scheme, and she reports having processed over 135 requests since January 1992 which has involved supplying over 4,000 items. Storage of the spores has now been improved by the purchase of a refrigerator: this will assist with maintaining spore viability over a longer period. Margaret wishes to place on record her thanks to her husband, Ian, for helping with the computing and type-setting and to the many members who take the trouble to supply spores.

Once again, it is my sad duty to report on the passing away of two long-standing members. At the time of preparing this report, we have just learned of the death of Dr Dougal Swinscow. Although we have not often had the opportunity of enjoying Dougal's company in recent years, we recall with pleasure those times he joined us on our forays.

I was looking forward to closing my report with the news of the Honorary M.Sc. awarded by Lancaster University to Reg Kaye, and I am pleased to say that despite his ill-health, Reg was able to attend the ceremony in person and receive his degree from the Chancellor of the University, HRH Princess Alexandra, in June. Sadly, Reg died on 31st August 1992. I will not attempt to convey what we have all lost with the passing of Reg Kaye: there can be few members who do not know of the value and high esteem with which he is held in this Society. I had the honour, along with the President and several members, of attending Reg's funeral at the Lancaster Crematorium on the 4th September. I do not think that any of us will ever forget the sight of Reg's coffin arriving heavily draped in fronds of soft shield fern and hart's tongue fern varieties interspersed with flowers from his much loved rock plants. Our pilgrimages to Silverdale will never be quite the same again.

A.M. Paul, seconded by M. Gibby, proposed the acceptance of the Secretary's Report. The President thanked Mr Busby.

ITEM 5 - HONORARY TREASURER'S REPORT: Nick Hards circulated his report to the meeting. As a result of the wide range of activities in the Centenary Year the accounts are considerably more complicated than usual. The format of the accounts has given rise to a vast amount of discussion in the Committee and it has become clear that we need a set of rules for the Centenary Fund. The Society has received donations specifically for the Fund. It has also received a surplus of £650 from the travelling exhibition, and a surplus of £351.87 from the garden tour. It is proposed to transfer these balances to the Centenary Fund as shown in the accounts. The Committee also did not wish to charge any administration costs to the Fund, since the intention is to build up a reserve for specific projects.

The Symposium showed a surplus in 1992 of £1,903.75 but £990 had been spent in the previous year. The remainder is not yet a final surplus because the cost of supplying copies of the published Proceedings (due out around the end of 1992) to those paying the registration fee for the full week is still to come. It is therefore not appropriate to transfer any balance to the Centenary Fund. The authors of *A World of Ferns* have requested that the royalties be transferred to the Centenary Fund. This is shown in the Publications Account.

The Centenary Fund itself needs to be earmarked for specific purposes, but we must keep some flexibility. The Committee is, for example, looking at producing a series of booklets on fern varieties. These would ultimately be self-financing but the cost of publication will need to be found initially. The main purpose of the Society is to spread information about ferns and their allies, not to hoard money in a bank or building society.

It is therefore considered that, subject to any such item being carefully vetted, the society should be able to draw temporarily on the Fund if the need arises, with the intention of repaying the money to the Fund when the outlay is recouped. The meeting was urged to approve the proposed rules for the Centenary Fund before moving on to general items in the accounts.

PROPOSED CONSTITUTION OF THE CENTENARY FUND OF THE BRITISH PTERIDOLOGICAL SOCIETY

1. The Trustees of the Centenary Fund of the British Pteridological Society shall be the President, Honorary General Secretary and Treasurer.

2. The Fund shall consist of:-
   a) monies donated to the Society for the purpose of increasing knowledge and understanding of pteridophytes.
   b) interest thereon.
   c) any other monies as agreed by the Annual General Meeting.

3. The Trustees may make grants out of the Fund for any activities which, in their opinion, will further the knowledge, conservation and understanding of pteridophytes in the fields of botany and horticulture.

4. Any application for a grant must be in writing to the Honorary General Secretary, setting out the objects of the project and the estimated cost. A successful applicant must send a report on the completed work to the Honorary General Secretary indicating where any results are to be published.

5. The Trustees shall decide whether a grant shall be made. They may, however, seek advice from others whom they consider to have specialist knowledge.

6. The Trustees may also permit the use of the Fund to support activities of the Society provided that those activities promote or increase knowledge and understanding of pteridophytes. The Trustees shall have regard to the likelihood of the Society being able to reimburse the Fund. No interest is to be charged by the Fund to the Society.

7. The balance of the Fund shall be deposited in an account or accounts in the name of the British Pteridological Society with any recognised Bank or Building Society.

8. The Trustees shall ensure that the accounts of the Fund are available to members within twelve months after the end of each calendar year.

9. If the Society is wound up, the Trustees shall ensure that the balance on the Fund is donated to another organisation or organisations with similar objectives in the fields of botany, conservation and horticulture.

The adoption of the Constitution of the Centenary Fund was proposed by A.C. Jermy, seconded by A.C. Pigott, and passed unanimously by the Meeting.

The Treasurer reported that the subscriptions do not reflect the increase in membership because many members paid early for 1991. Booksales and merchandise both did well, with an increase in the number of activities providing more outlets. A special word of thanks should go to Steve Munyard in his first year running the booksales, and to Anthony Pigott for continuing to organise the merchandise. The Chelsea Flower Show receipts relate to sales of Society Publications and merchandise but no separate records were kept at the time.

On the expenditure side, there were two issues of the *Fern Gazette*. The *Bulletin* was extra large and the cost should be lower in 1992. Printing and stationery did not include a bulk purchase of envelopes which gave an abnormally high figure for 1990. Inevitably it cost more in administration for such a busy year. Merchandise costs include a large amount outstanding from purchases in earlier years.

Bank charges always provoke comment. Banks are very hardnosed and normally treat all organisations as businesses. We now have a new account with no charges but this was not changed until early in 1992.

The Publications Account saw the issue of three new publications, and has moved into deficit. We can for the time being fund this from the General Fund. The balance should be cleared in two or three years but we may need more reserves. Publications always make a profit if they sell out.

The Trustees of the Greenfield Fund made a grant to the Pebworth Show, and that event was a great success.

Finally, it will be necessary to increase subscriptions by about 25% in 1994, to cover four years of inflation since the last increase. The Treasurer said he would like to work out the 1992 position before proposing any figures, and anticipated the need for a short Special General Meeting at the Kew Meeting in 1993 to allow time to circulate members well in advance.

Clive Jermy then asked about publishing the Books and Publications Accounts. The Treasurer replied that these were not normally itemised separately although both Accounts had been made available for scrutiny by the auditors. The Treasurer explained that Steve Munyard had needed an extra £1,000 to supply books for the Symposium. Normally neither Steve Munyard nor Anthony Pigott carried stock valued in total more than £1,000.

The adoption of the Accounts was proposed by J.R. Woodhams, seconded by P.H. Ripley and passed unanimously by the Meeting. The President thanked Dr Hards.

ITEM 6 – HONORARY MEETINGS SECRETARY'S REPORT: Anthony Pigott said that 1992 had been another successful year although it might have been a come-down after the Centenary meetings. The indoor meetings had been held at Derby and Kew, and field meetings had been held in Hampshire, Moffat and Devon. The foreign trips had continued with a visit to northern Spain. They had all run well, thanks to the endeavours of the organisers. The attendance at the Devon meeting was the highest recorded apart from the Kendal meeting the previous year.

It was hoped to keep up the momentum next year with field meetings in north Wales, Galloway, Northumberland and another foreign trip to central France. An indoor twin meeting was being planned for Edinburgh and Glasgow. In conclusion, Anthony Pigott thought that it was important to maintain the overseas programme and it seemed that provided leaders were forthcoming, venues could be suggested for several years ahead. Over the last four years the autumn indoor meeting had provided an opportunity for paper reading of a more serious nature and it was hoped this would continue in Cambridge next year for the AGM. He also hoped that the trend established by the Kendal meeting and the more recent north Devon meeting of a field meeting with an element of talks in the evening and an emphasis on the horticulturalist would continue. However, the Meetings Secretary and Sub-committee were always looking for people to lead meetings and for new ideas. Please contact them and they will try to organise it.

Alan Ogden, seconded by M.E. Nimmo-Smith proposed the acceptance of the report and all agreed. The President thanked Mr Pigott.

ITEM 7 - EDITORS' REPORTS: *Fern Gazette* - Jim Crabbe reported that the latest *Fern Gazette* had been published the day before but was smaller than usual as the Editor had been, and still was, short of copy. He thought there was no particular reason for this state of affairs but urged members to do all within their powers to rectify this.

Pteridologist - Martin Rickard thought that the last edition had been well received and of a good standard, despite members writing for the various other publications in the Centenary Year and for national magazines. Although he preferred to maintain a balance in the *Pteridologist* between articles for the fern grower and ferns in nature, the former had predominated and were likely to do so in the next edition which would be dedicated to Reg Kaye.

Bulletin - Alison Paul reported that the 1991 Bulletin had been published later than planned but was otherwise satisfactory. Most of the photographs had reproduced well. She appealed for more photographs for the next issue, either glossy prints or slides. She asked for reports to be typed, not hand-written and on computer disc whenever possible.

Clive Jermy asked whether photographs used in the journals could be preserved in the Society's archives for the bicentenary.

Acceptance of the Editors' Reports was proposed by R.J. Smith, seconded by R.N. Timm and passed unanimously. The President thanked the Editors.

ITEM 8 - ELECTION OF OFFICERS AND COMMITTEE:

Election of Officers: Honorary General Secretary - A.R. Busby.
Honorary Treasurer - N.J. Hards.
Honorary Meetings Secretary - A.C. Pigott.
The President was pleased to note that they were all willing to serve for another year. R.J. Smith, seconded by A.M. Paul, proposed that they should be re-elected en bloc and the Meeting agreed unanimously.

Election of Honorary Editors: Barry Thomas and Jim Crabbe, Martin Rickard and Alison Paul were proposed by N.J. Hards, seconded by R.G. Ackers and were duly elected to serve as editors for the *Fern Gazette, Pteridologist* and *Bulletin* respectively.

Election of Committee Members: The Honorary Secretary reported that P.J. Acock and T.G. Walker were standing down and P.G. Barnes had resigned. He had received four nominations: Rob Cooke, proposed by A.R. Busby, seconded by M.H. Rickard; Dorothy Fortune proposed by A.R. Busby, seconded by J.H. Bouckley; Stephen Munyard, proposed by A.R. Busby, seconded by M.E. Nimmo-Smith and Gavin Stark, proposed by J.H. Bouckley and seconded by R.P.H. Lamb. The Secretary explained that one vacancy had been left open from last year so that all four were elected to the Committee.

ITEM 9 - ELECTION OF AUDITORS: Ray Smith and Graham Hoare, proposed by A.R. Busby and seconded by J.H. Bouckley, were duly elected.

ITEM 10 - ANY OTHER BUSINESS:
The President made the presentation of the Stansfield Medal to Clive Jermy. The President said that it was the highest award that could be made by the Society, and was awarded

in recognition of outstanding services to the Society and to pteridology. He reminded the members that Clive Jermy would be the seventh recipient. Clive had held the positions of Editor, President and Vice-president and had been responsible for making the *Fern Gazette* into a journal of international academic repute. The President thanked him for all his services and for sharing his knowledge with members and congratulated him on an award he had earned and deserved.

In response, Clive Jermy thanked the Committee for bestowing this honour upon him. He reminded us that our first President, whom this medal commemorates, was the grandson of Abraham Stansfield, who by the time young Frederick was 15, was selling over 1,100 species of ferns and their varieties from his nursery at Todmorden. Clive quoted from the nursery catalogue to illustrate the firm's approach to fern marketing:
". . . The bright colours of flowers are admired by the least intellectual but the beauty of form and texture of ferns requires a higher degree of mental perception and a more cultivated intellect for its proper appreciation. Hence, we regard the growing taste for the cultivation of ferns as proof of mental advancement."

Clive went on to say that his own introduction to ferns was less auspicious and his contribution more humble than Frederick Stansfield's, and he paid tribute to the many enthusiastic supporters and lasting friends who had encouraged his involvement with the BPS, which, he said, would continue as long as he was able.

There was no other business and the meeting closed at 3.35 p.m.

A.R. Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1991

ORDINARY ACCOUNT

(1990)	**INCOME:**	
8835.87	SUBSCRIPTIONS	£8835.63
820.90	INTEREST	872.40
251.00	BOOKSALES	400.00
3.00	SPORE EXCHANGE	4.50
418.00	MERCHANDISE	1279.61
-	CHELSEA FLOWER SHOW	768.03
64.10	DONATIONS	-
134.50	SUNDRIES	7.00
10527.37	**TOTAL INCOME**	£12167.17
	EXPENDITURE:	
1626.00	METLOC - PTERIDOLOGIST	1708.00
2692.00	METLOC - GAZETTE	3675.60
1245.00	METLOC - BULLETIN	2452.00
1256.00	PRINTING AND STATIONERY	698.30
1500.00	ADMINISTRATION AND POSTAGE	2648.06
25.10	SUBSCRIPTIONS TO SOCIETIES	26.10
106.28	BANK CHARGES	167.37
52.80	PLANT AND SPORE EXCHANGE	60.00
121.00	MEETINGS	46.50
172.50	MERCHANDISE	1993.95
-	BOOKSALES ADVANCE	1000.00
10143.19	**TOTAL EXPENSES**	£14475.88

CENTENARY ACTIVITIES:

	SYMPOSIUM RECEIPTS	9468.63	
	EXPENSES	(7564.88)	1903.75
	EXHIBITION RECEIPTS	1550.00	
	EXPENSES	(900.00)	650.00
	GARDEN TOUR RECEIPTS	6595.94	
	EXPENSES	(6244.07)	351.87
1346.21	ADMINISTRATION		(669.22)
			£2236.40
	BALANCE FOR 1991		(72.31)
	TRANSFER TO CENTENARY FUND 31.12.1991		(1001.87)
	BALANCE BROUGHT FORWARD FROM 1990		4732.45
	BALANCE CARRIED FORWARD AT 31.12.1991		£3658.27

PUBLICATIONS ACCOUNT

	BALANCE BROUGHT FORWARD		5306.60
571.59	INCOME: Journals and Offprints		804.03
101.00	Hardy Ferns		144.00
118.00	Special Publication 1		322.97
130.00	Special Publication 2		298.39
-	Special Publication 3		189.48
-	Special Publication 4		238.08
-	Special Publication 5		170.50
1000.00	ROYALTIES		1000.00
			8474.05
	EXPENSES: SP 3	796.00	
	SP 4	4704.00	
	SP 5	2420.00	
	ROYALTIES - TO CENTENARY FUND	200.00	(9920.00)
	CARRIED FORWARD (DEFICIT) at 31.12.1991		(£1445.95)

GREENFIELD FUND

	BROUGHT FORWARD	£1872.73
169.65	INTEREST RECEIVED	168.72
-	GRANT (PEBWORTH SHOW)	(304.00)
	CARRIED FORWARD AT 31.12.1991	£1737.45

CENTENARY FUND

	BROUGHT FORWARD	£1371.56
500.00	DONATIONS RECEIVED	577.50
69.93	INTEREST RECEIVED	113.04
	TRANSFER FROM ORDINARY ACCOUNT	1001.87
-	ROYALTIES FROM PUBLICATIONS ACCOUNT	2000.00
	CARRIED FORWARD AT 31.12.1991	£5063.97

Notes to Accounts

1. Stocks of books are: Special Publication 1-91, 2-50, 3-100, 4-913, 5-469. Sales should clear the deficit in the Publications Account within two years.

2. As previously, subscriptions are recorded in the year of receipt and no provision has been made for accrued interest.

3. Small balances are held by certain officers and are not included in the accounts.

LECTURE MEETINGS AND DAY VISITS 1992

SPRING INDOOR MEETING, DERBY - 7 March. In the morning there were two demonstrations of fossil pteridophyte material. Alan Willmot showed some coal balls, which are calcified regions from coal seams of Carboniferous age. These contain preserved stems and roots, and were sectioned and etched with dilute hydrochloric acid. After drenching with acetone, a sheet of acetate was pressed onto the surface. When the acetone had evaporated, sections of the plant remains should have stuck to the acetate for examination under a microscope. This did not work on the day but in true 'Blue Peter' fashion Alan had some which he had prepared earlier and members were able to examine these.

Jennifer Ide put on a demonstration of mainly fossil horsetails and lycopods. These included *Calamites* (an arborescent horsetail), *Sphenophyllum* (herbaceous horsetail) and *Lepidodendron* and related genera (arborescent lycopods). These forms are no longer present in today's flora but are still recognisable as horsetails and lycopods. The specimens showed a variety of morphological and anatomical detail, and some permineralised specimens showed the internal anatomy in exquisite detail.

In the afternoon, Alan Willmot first told us about Jane Barker's work on the sex life of the *Dryopteris* gametophyte. Spores of *D. dilatata* and *D. filix-mas* were sown at various densities on agar and grown under laboratory conditions. It obviously requires a particular type of skill and patience to sow just one single spore! In sowings at very low densities, these two species produced all typical heart-shaped prothalli, but initially these produced only archegonia. If grown on for longer, they do become hermaphrodite. On the other hand, high density sowings yielded two different types of gametophyte. As well as the typical ones with their archegonia, long thin ones were produced with only antheridia. It is known that, in some species, large female gametophytes secrete a hormone which makes other gametophytes male. However, this was not detected in the study species. Dense cultures do produce both sexes but the reason is not clear. It may be that some grow faster or germinate earlier, and crowd out the others. The talk was followed by a lively discussion on the practical implications for growers. Ideally a dense enough sowing is needed to produce male and female at the same time on different gametophytes, but all is not necessarily lost if only one or two germinate.

Nick Hards then told a tale of two ferns he had found soon after he joined the Society. He showed slides of a fine divisilobe form of *Polystichum setiferum* which he had originally found on a Society meeting to the Cotswolds in 1978. Although proliferous, it has proved very difficult to propagate and only a few offsets have been shared around. He recalled being surprised that the party was so excited, since at the time he had only ever seen similar, cultivated forms of *P. setiferum*. At the time, he had been much more interested in identifying a *Dryopteris affinis* which had been growing right beside, and almost hiding, it. The second fern was a find of *Dryopteris submontana* in Millers Dale, Derbyshire. This was only the second known site in the county and most of the plants are safely tucked away on high and inaccessible parts of the railway cutting. Nick had found this while preparing to lead his first field meeting, in 1980. He had since learnt that the railway ballast for that line had come from a quarry at Horton-in-Ribblesdale, very near the one area where this fern is common. The other site in Derbyshire, also a railway cutting, used to belong to a different rail company and the ballast came from Llandudno. It might be worth looking for *D. submontana* there. A discussion about *D. submontana* and its parents *D. pallida* and *D. villarii* (it is an allotetraploid) followed. It was mentioned that *D. submontana* on the Continent is morphologically distinct, and there was some speculation about whether the plants at the one well known isolated site, Eglwyseg, might be the continental form. There are also old records from Cwm Idwal and Honister Crags. At the former the plant has not been found this century and at the latter there have only been fragments found in rock falls. It is even possible that one or the other might be *D. villarii* since *D. submontana* has only recently been recognised as a separate species. If only someone could refind the old records . . .

N.J. Hards

KEW GARDENS - 30 May. About 50 members assembled at the Lower Nursery mess room for an experimental session, the aim of which was to cover various aspects of how ferns are classified. Ever since Anthony Pigott had suggested such a new type of meeting it seemed an excellent idea.

After a general introduction, the plan was for one half of the group to spend 30-40 minutes at the microscopes viewing fresh preparations of stipes and laminas of representatives of eight fern families. Meanwhile the other half were to be using the lenses supplied to examine those same (labelled) representatives in the burgeoning Tropical Fern Nursery (house 38). Despite some problems with material and organisation, some members were convinced that there are fundamental differences between Thelypteridaceae and Dryopteridaceae, and also that features of the upper surface of a frond are often more revealing than those of the undersurface.

At 1.15 and 3 p.m. many members went to one of the two sessions on *Asplenium* given by Bob Johns in the Herbarium Staff Room (a completely new Kew venue for the BPS!). With an array of herbarium specimens, excellent drawings and photographs of spores, Bob explained the importance of spores in helping to illuminate the differences between the often morphologically similar-looking fronds of many New Guinea and S.E. Asian Aspleniums.

Between 4.30 and 5.30 p.m. most of the party assembled back at the mess room for a free exchange of questions and answers on ferns at Kew and, most importantly, a good range of new ideas for future meetings at Kew.

Peter Edwards

AUTUMN INDOOR MEETING, CHELSEA PHYSIC GARDEN - 17 October. A large number of members attended this meeting, which combined the delights of the Chelsea Physic Garden with a variety of entertaining and interesting lectures.

After an hour or so spent enjoying the gardens in fine sunny weather, we heard Peter Glaves, of Greenwich University (sp. nova!) describe his work on spore deposition and germination in *Dryopteris dilatata*. Most spores are shed over only a few days, and most fall very close to the parent plant. The density of gametophytes, however, affects their subsequent development. Densely-sown spores yield, under the influence of antheridiogens from large gametophytes, large populations of small prothalli with only male sex organs.

Adrian Dyer then described his extensive studies on fern 'spore banks', reservoirs of viable spores, up to 1.25m deep in soil, and capable of germination, even for some green-spored species, after many years. The considerable implications for *in situ* and *ex situ* conservation and the production of hybrids were discussed.

Fred Rumsey, from the University of Manchester, described populations of extremely slow-growing *Trichomanes* gametophytes, including one at the first (1724) recorded site near Bingley, from which the sporophyte has been lost since before 1800. Studies on the gametophyte suggest that cross-fertilisation is probably necessary for successful reproduction, but that most gametophyte populations form a single clone and are reluctant to produce archegonia. These observations, together with the extreme delicacy of the young sporophyte, may explain the relative abundance of populations of gametophytes alone.

After the AGM, inevitably extended, but at which we had the pleasure of witnessing Clive Jermy's richly-deserved award of the Stansfield medal, Professor de la Sota described his studies on American Salvinias. Most species are found in the near neutral (pH 6.5-7.0) 'white' waters such as those of the Rio Solinóes and Amazon in Brazil. Professor de le Sota's studies of a form with some xeromorphic characters from the clear acid waters of the Rio Negro (a tributary of the Amazon) whetted our appetites for the seminar he was due to give at Whitelands College in November.

Finally, Johannes Vogel described his studies on the fern flora of the Serpentine rocks (apparently no connection with a form of moustache) in southern Germany and surrounding countries. With excellent photographs, the characteristics and other detailed investigations of *Asplenium* species (including *A. trichomanes, A. trichomanes-ramosum (A. viride))* and their hybrids and subspecies were described. Johannes gave us a fascinating insight, aided by a collection of living specimens, into the complex evolutionary and genetic relationships in the genus. It is certainly to be hoped that these very special habitats and extremely rare plants survive the current pressures of pollution and geological exploitation.

Jennifer Ide deserves our congratulations, as well as our thanks, not only for assembling an international range of speakers of the highest calibre, but also for providing excellent facilities and refreshments throughout the day.

Paul Ripley

photo: A. Leonard

New Forest. Shave Wood. Pat Acock and Anthony Pigott put their heads together over *Equisetum* x *bowmanii*

NATIONAL FIELD MEETINGS 1992

NEW FOREST, HAMPSHIRE - 24-26 July

P.J. Acock

A beautiful Saturday morning found a party of around twenty of us in the New Forest at Emery Down (41/282 082). Our intrepid leader, the curator of the 'Portsmouth Botanic Garden', had spent a lot of time researching the various sites and took us into the wood close by to observe a beautiful stand of *Oreopteris limbosperma*. Someone, however, stole the leader's thunder by discovering one in the approaching lane. Further into the wood along the banks of a stream was a huge colony of *Phegopteris connectilis*.

A short drive to the Cadnam-Lyndhurst Road, into the Shave Wood car park (41/294 122), enabled us to see the largest colony of that splendid recently discovered hybrid *Equisetum* x *bowmanii*. Although some herbs and grasses were starting to compete, *E.* x *bowmanii* seemed safe for the time being. A longer drive took us to lunch at Holmsley Inclosure (41/232 007). After a slow but welcome lunch break, where we got to know some of the newer members and sampled some delightful sweets, we crossed the road to look at *Thelypteris palustris*.

We continued our travels to Wilverley Inclosure (41/255 010) where, after much exertion and climbing over a number of trees still fallen from the storm, we came across a few magnificent plants of *Dryopteris aemula*, uncommon in Hampshire. We went into the Brownhill Inclosure and saw some extraordinarily large *Osmunda regalis* growing in a swampy area and nearly lost Jennifer Ide who was fast sinking into the ground. After the rescue we saw some smaller plants of *D. aemula* on our way out.

We went on in the late afternoon to Hatchet's Pond (41/365 012) where we saw *Pilularia globulifera* growing on the pond margin and on into the water. Around the banks amongst the gorse were a few plants of *Osmunda regalis*. A little further down the road at Hatchet's Moor (41/353 002) at a deserted wartime airstrip we saw *Ophioglossum azoricum* at one of its out-stations. A fine first day's ferning saw us a little divided at the evening meal.

Sunday morning found us further east in the Lordswood area, north of Southampton and east of Junction 1 of the M27. Having searched for the colony of *Equisetum hyemale* myself in the area on a previous occasion, I was taken aback by the size of the colony, which was considerably more dominant on one side of the river than the other. We then drove about 200 yards to see a colony of *Equisetum sylvaticum* which I had stumbled on while looking for the *E. hyemale* site. With *Dryopteris carthusiana* and *D. dilatata* present, there was much discussion over whether giant ginger-scaled plants were the hybrid *D.* x *deweveri*.

A drive to Bere Farm (41/603 142) found us on a bridge over a disused railway line. The bridge had a range of spleenworts including *Asplenium ceterach*, not so common in the east, even of Hampshire, *A. adiantum-nigrum*, *A. ruta-muraria* and *A. trichomanes* subsp. *quadrivalens*. *A. scolopendrium* in the railway bank with *Polystichum setiferum* and *P. aculeatum* made the banks interesting, with *Polypodium interjectum* on the supporting buttresses of the wall.

After a good lunch at Soberton Heath we set off for a forest walk at West Walk (41/597 122). Here our intrepid leader was determined to check up on who was the fittest. A very fine wood had an enormous stand of *Dryopteris affinis* subsp. *borreri*, possibly a few subsp. *paleaceo-lobata* and *D. affinis* subsp. *affinis* of some maturity, but some opening up of the wood and the effect of tourists had caused a number of the plants stress over the year. Large plants of *Blechnum spicant* were observed as well as three *Oreopteris limbosperma. Equisetum fluviatile* was present but we omitted a visit to the pond. After a long walk through the woods we saw a few majestic plants of *Polystichum aculeatum*, along with *Athyrium filix-femina.* On the way back on a circular route we looked at a few hectares of *Dryopteris dilatata* and *D. carthusiana.* Though *D.* x *deweveri* seemed present on an earlier inspection, some doubts were expressed on this occasion. A welcome ice-cream van greeted our return to the car park, where much searching for the last few pieces of silver secured an ice-cream for all of the party.

We must thank Andrew Leonard for a magnificent and well researched weekend, which we all enjoyed very much.

MOFFAT, SCOTLAND - 31 July - 2 August

P.H. Ripley

An encouragingly large group of 18 members and guests assembled at the Balmoral Hotel in Moffat, on 30 July.

This area of Scotland is classic glaciated terrain, composed principally of Silurian sediments, with occasional igneous intrusions. Moffat lies on the River Annan, which drains the watershed between it and the northward-flowing Clyde. Moffat Water runs east-west from the watershed at Birkhill (with its well-studied shale series). Between, lies the highest massif in the south of Scotland (although the Merrick, 843m, is the highest peak), with many peaks above 800m, culminating in Broad Law.

The open hills are covered by *Oreopteris limbosperma* (which frequently becomes the dominant plant), and *Pteridium aquilinum. Blechnum spicant* is abundant among heather, and *Athyrium filix-femina* near streams. On screes, *Cryptogramma crispa* is very common, with *Dryopteris oreades* where grazing permits. Steep-sided burns, or gills, are often tree-lined, and provide protection for *Dryopteris* species.

A species list is attached, but a brief description of the excursions follows.

Friday 31 July - Loch Skene. From the National Trust car park at the Grey Mares Tail, a path runs for about two miles to Loch Skene, a marvellous example of a 'hanging lake' and quasi-alpine terrain. *Isoetes* was spotted at the edge of the lake by Matt Busby, and *Equisetum sylvaticum* and the montane form of *E. palustre* were features in the acid peat level. At the head of the loch, screes and cliffs rise and these were searched, in particular for *Woodsia ilvensis.* We failed to find this, although Trevor Lording reports finding a single plant, very near our search, as recently as July this year. We were rewarded, however, by plenty of *Dryopteris oreades*, and by *Phegopteris connectilis* and *Cystopteris fragilis* in particular in the rock clefts. Higher up *Diphasiastrum alpinum* was found during reconnaissance, but strangely in nothing like the quantities found (above 750m) on hills further west. Your leader was far too ambitious in his itinerary, and a whole day could very profitably have been spent at this site.

Raking Gill. A small number visited Raking Gill, which is almost at the head of Moffat Water. Shade by low trees encouraged *Polystichum setiferum* (the only site for this species recorded during this trip) and *Gymnocarpium dryopteris.* A *Polypodium* which might have been *P. interjectum* was seen, and a possible hybrid involving *Dryopteris oreades.*

Craigbeck Wood. We were fortunate to have Anthony Pigott with us on this weekend, and he brought his expertise to bear on the *Dryopteris affinis* present in this wood. Morphotypes *borreri, paleaceo-lobata* and *cambrensis* were found here, and in addition, a possible hybrid between *cambrensis* and *D. filix-mas*. Another feature of this wood was the relatively abundant *Phegopteris*.

Saturday 1 August - Hart Fell Burn. Hart Fell Spa was favoured apparently by the Victorians. One can only conclude that those that reached the small brackish pool must have been more in need of its restorative properties after the walk than before. *Dryopteris oreades* was very common on the scree and by the upper Hart Fell burn, with the wide variety of form determined by relative exposure, clearly shown. *Dryopteris affinis* morphotype *cambrensis* was also a dominant plant by the open part of the Burn. Before this upper area, however, the Burn traverses a very deep shaded gorge. *Gymnocarpium dryopteris, Cystopteris fragilis* and *Polystichum aculeatum* were features here, with *D. affinis* morphotype *borreri* very common, and our only sighting (off walls) of *Asplenium trichomanes*.

photo: J. Garstang

Brenda Smith, Marjorie Garstang and Margaret Collins examining *Dryopteris oreades* at Hart Fell Spa

Carriefran Glen. In the afternoon, the Carriefran Burn was followed almost to its source at the head of Carriefran Glen. This proved a slightly disappointing area, but *Selaginella selaginoides* and the ubiquitous *Cryptogramma crispa* were enough to delight. Insufficient time was available for an exploration of Black Hope, but the screes and cliffs of both these glens merit further exploration.

Sunday 2 August - Lavern Burn. This trip took us further north and west into the Lowther Hills. Exploration of two burns provided a total of 19 species, including a single plant of *Dryopteris affinis* morphotype *affinis* (the only one seen during this weekend), and *Lycopodium clavatum*, spotted again by Matt, just by the road. *Dryopteris oreades* (in scree), *Phegopteris connectilis, Gymnocarpium dryopteris* and *Polystichum aculeatum* were species of note.

I hope this weekend was enjoyed by the participants as much as by its organiser!, although quite a lot of hard work was involved in exploration of the sites. It is difficult to strike the balance between exploration and 'The Grand Tour' and I should welcome members' comments on the preferred content and nature of field meetings.

Moffat 1992. Pteridophyte Distribution List

	Loch Skene	Raking Gill	Craigbeck Wood	Hart Fell Burn	Carriefran Glen	Lavern Burn
Grid Reference	36/167 168	36/197 153	36/120 043	36/082 106	36/151 135	36/905 067
Lycopodium clavatum						x
Huperzia selago	x					
Diphasiastrum alpinum	x					
Selaginella selaginoides					x	
Isoetes sp.	x					
Equisetum arvense					x	x
E. fluviatile	x					
E. palustre	x					
E. sylvaticum	x				x	
Cryptogramma crispa	xx	xx		x	xxx	xx
Polypodium vulgare	x	x*	x	x		x
Pteridium aquilinum	xxx	xxx	xx	xxx	xxx	xx
Phegopteris connectilis	x		xx		x	x
Oreopteris limbosperma	xxx	xxx		xx	xxx	xxx
Asplenium trichomanes				x		x
Athyrium filix-femina	xxx	xx	xx	xxx	xx	xxx
Gymnocarpium dryopteris		x	x	x		x
Cystopteris fragilis	x	xx		x		x
Polystichum aculeatum			x	x		x
P. setiferum		x				
Dryopteris affinis						
- affinis						x****
- borreri	x	x	xxx	x	x	x
- cambrensis	x		x***	xx		
- paleaceo-lobata			x			
- robusta						x
D. dilatata	x		xx	xx	x	x
D. filix-mas	x	x	x	xx		x
D. oreades	x	x**		xx	x	x
Blechnum spicant	xxx	xx	xx	xx	xxx	xx

x, xx, xxx indication of relative abundance
* or interjectum
** also a possible hybrid with ? D. filix-mas
*** + possible hybrid with D. filix-mas
**** at 26/901 067

NORTHERN SPAIN - 18-25 August

Graham Ackers

Tuesday 18 August. Our one week field meeting began with five parties converging on Cangis de Onis in the NW Picos de Europa. Our organiser, Ronnie Viane, arrived first from Belgium, having driven vast miles across half of Europe. Rémy Prelli and family arrived next, also following a long drive from Brittany. Then Lesley Williams and I arrived, having flown to Santiago the previous week; Paul Ripley and family had arrived on the Plymouth to Santander ferry. Last but not least Pat Acock, Andrew Leonard and Elise Knox-Thomas and daughter arrived in their hire car from Bilbao airport. Our accommodation for the week for most of the party was the 'Hotel Favila', a very pleasant family run hotel, with most helpful staff. Paul Ripley and Elise Knox-Thomas and families camped nearby. We took our first meal together that evening.

Wednesday 19 August. For our first site, we travelled north, out of the Picos and towards the coast. The Mirador del Fito is something of a Spaniards tourist trap, with fine views, and (some) facilities for coach parties. However, we were lucky to experience a couple of hours of quiet before the tourist masses arrived. The site was steeply sloping, with outcrops of sandstone, and *Ulex gallii - Erica arborea - E. mackaiana* heathland. Our main fern interest was the Macaronesian *Dryopteris guanchica.* Large specimens were uncommon and were distinguished from the *D. dilatata* present by their dark green colour, more stiff and upright appearance, and more pronounced pinnule teeth. Smaller specimens were more difficult for us amateurs to distinguish, and several heated debates occurred! *Dryopteris aemula* also occurred, but fortunately presented fewer identification difficulties. *Dryopteris affinis* and *Blechnum spicant* were also frequent. A number of Aspleniums were growing on a nearby building, including a particularly large specimen of *A. trichomanes*, which proved to be nothosubsp. *lusaticum*, the hybrid between subsp. *trichomanes* and subsp. *quadrivalens.*

Throughout the week, detailed records of all ferns seen were kept - see the Table for a full list of ferns at each site. (The Mirador del Fito was Site 1). A key at the end of the table shows an abundancy notation. This was only applied subjectively during our trip, so no definition will be attempted. *Asplenium trichomanes* and *Dryopteris affinis* were not recorded at their subspecific and morphotypic levels respectively.

For lunch we stopped at a very ethnic 'cidreria' to sample the local beverage. This cider is always served in the traditional way by pouring the contents of the bottle into a glass from a great height, which makes the beverage more lively. Practising this throughout the week proved a very wetting experience!

Our afternoon site was nearby, in a wooded valley near Gobiendes (Site 2). This was a wonderful place - damp, dark, and dominated by luxuriant ferns, mainly *Asplenium scolopendrium, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis, D. dilatata, Osmunda regalis,* and *Polystichum setiferum.* But there were some special ferns too. With its preference for vertical banks, the furry fronds of *Stegnogramma pozoi* appeared every so often. This fern has a strangely discontinuous distribution, being mainly tropical, but with Macaronesian/Spanish outposts (it is a very common fern on the levada walls in Madeira). Another Macaronesian element occurred with large specimens of *Woodwardia radicans*, both on the forest floor, and draping over large banks. This is a splendid fern in its natural habitat. The prize however was *Trichomanes speciosum*, occurring in marvellous stands which attracted much adoration and the multitudinous popping of flashguns. Having never seen this fern growing in a natural habitat before, I was delighted, to say the least! After this, the spotting of another filmy fern, *Hymenophyllum tunbrigense* in a similar habitat did not quite have its usual impact! In all, a total of 23 ferns were recorded at (and around) this site, including more specimens of *Dryopteris guanchica*, adding more fuel to the recognition debate with *D. dilatata*!

Thursday 20 August. We travelled many kilometres this day! First stop was the village of Cudillero (Site 3), about 100 kilometres west of Cangis de Onis. The main interest here was *Davallia canariensis* occurring on cliffs along a 400m stretch of the coastal port road. Not all stands were easily accessible, but we did manage to get close enough to a couple of patches to take photographs. This is an uncommon fern in N. Spain, and it was nice to see such substantial stands. Interestingly, *Asplenium marinum* is also uncommon in N. Spain due to the lack of acid rocks along the coast, but we did see a specimen to the east of the harbour.

We then headed inland via a minor road (the 0661), along parts of which verdant curtains of *Dryopteris affinis, Athyrium filix-femina, Osmunda regalis* and *Woodwardia radicans* were spotted. Our destination was a stretch of road south of Tineo (Site 4). The only problem was - the road had gone! Or rather it had been replaced by a modern road, largely obliterating the original roadside cliffs which were to have been our site. Our initial searches turned up little, other than one very dilapidated *Anogramma leptophylla*, the only one seen on the trip. Luckily, where a tunnel had been built to take the new road, a section of the old road remained, and so did the cliffs. After some careful searching, we located 20-30 specimens of *Cheilanthes hispanica*, another 'first' for most of us. The ferns were difficult to reach, and Ronnie gave the first of his mountain goat imitations in his enthusiasm to see every plant! The ferns were in rock crevices, and looked quite healthy, with many expanding fronds. Having travelled such a long way, we were very relieved to have found them!

A couple of kilometres south of the previous site was some north facing woodland (Site 5), which we investigated for a short time. The ferns mostly in evidence were *Athyrium filix-femina, Dryopteris affinis,* and *Polystichum setiferum*. The latter fern appears to be very common in N. Spain, perhaps more so than in the British Isles. We also found *Cystopteris fragilis,* and the Southern European *Cystopteris diaphana* (= *C. viridula),* one specimen of which had particularly large fronds and may have been a hybrid.

To digress a little, fern sites in this vast region are not, on the whole, obvious. As with most foreign countries, rights of way and areas of common land are virtually non existent, much of the land being in private ownership and farmed. Thus to have gone to Spain without prior knowledge would have proved most frustrating. In fact, we used Viane *et al.* (1987) and Ronnie Viane himself as our guides. It was the best way to see the maximum number of ferns in the shortest possible time!

Friday 22 August. To compensate for having driven about 300km the previous day, we visited a limestone region around two lakes - Lago Enol and Lago de la Ercina. This was our first site (Site 6) actually in the Picos de Europa, a region of outstanding scenic and natural history interest, with mountains nearly three times the size of those in the Lake District! En route, we visited Covadonga Monastery, perched impressively amongst spectacular scenery. We spent the morning searching a steep slope by Lago Enol. The habitats included grassy areas, scree, large boulders, and cliff faces, and we found several species of flowering plant. After lunch, we spread out to search a broad area to the south of Lago de la Ercina. The topography included valleys and plains, with grassy and swampy areas, and varied limestone features including bedrock, cliffs and boulders. Ferns in abundance were *Asplenium trichomanes* (which Ronnie studied in some detail), *Cystopteris fragilis,* and *Gymnocarpium robertianum*. Also much in evidence were *Asplenium ruta-muraria, A. trichomanes-ramosum (A. viride), Dryopteris submontana, Polystichum aculeatum,* and *P. lonchitis.* Back at the car, microscopic examination of spores confirmed a specimen of *P.* x *bicknellii.* A classic limestone day!

Another note in passing. Predictably, bracken is widespread and common, though perhaps not as invasive as in parts of Britain, maybe partly due to the fact that farmers keep more cows than sheep for grazing. It is noted where appropriate in the table, but not otherwise mentioned in the text.

Saturday 22 August. In the morning we headed north to the foothills of the Sierra de Cuera, a mountain range between Picos de Europa and the coast. Our site (Site 7) was along part of the Rio Zardon, a dark and humid valley, with steep and high banks, over acid sandstone. Its accessibility was somewhat marginal, and it was only with the assistance of Ronnie's deadly looking machete that we managed to reach the river. Our destination was an area with several stands of another Macaronesian fern, *Culcita macrocarpa.* Fronds of this fern, which is related to the tree-ferns, are large and pendulous, and made a magnificent sight clinging to the steep banks. Much excitement followed, including the obligatory popping of flashguns. Although this fern is rare, the specimens seemed in good condition, with a number of juvenile fronds noted. Other ferns adorning this wonderful 'ferny' place were *Asplenium scolopendrium, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis, D. dilatata* and *Osmunda regalis.* At this site, the latter fern existed as large specimens; it appeared fairly commonly all over the region, but frequently in the form of stunted specimens growing on cliff faces.

The day continued with a scenic drive over the Sierra de Cuera to the coast. During the lunch period, we allowed ourselves a break from ferning, and visited the rather crowded beach at Poo. The sun shone brightly, so several of the party swam in the warm and sheltered bay. Whilst swimming, we discovered a large cave, with a large fern growing on a ledge in the roof. It was probably a fine specimen of *Asplenium marinum,* but was just too far away to be absolutely sure.

In the afternoon we explored the region of the Rio Puron valley, east of Llanes (Site 8). We first visited a *Eucalptus*-wooded slope from which *Dryopteris corleyi* had been described in 1982. It is an attractive plant, with narrow slightly crisped fronds. We found a number of these ferns, some amongst scrub containing a high proportion of uncomfortably prickly gorse! Occurring either accidentally or started deliberately, the area had experienced fire, leaving some of the ferns the worse for wear. We particularly noticed burnt *Dryopteris affinis,* with small fronds emerging from rhizomes of previously much larger plants. We drove a very short distance to another gorse-ridden site nearby to find the hybrid of *D. corleyi* with *D. affinis* subsp. *affinis* - *Dryopteris* x *asturiensis.* Here we also searched the edge of the road, to find several wall dwelling species, including *Adiantum capillus-veneris,* as well as *Athyrium filix-femina, Osmunda regalis,* and *Equisetum* x *litorale* in dampish ditches.

Sunday 23 August. We drove to the village of Soto de Sajambre in the western Picos, and then along a very rough muddy track for about 5km into the mountains. This we did in convoy, but unbeknown to the rest of the party, the last car became stuck. Pat, Andrew and Elise spent much of their day in the resolution of this problem, and unfortunately missed the day's ferning. Where the track ended, the rest of the party continued on foot. Initially, we passed through some splendid mixed limestone and sandstone beech woods, with *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis, D. dilatata, D. filix-mas* (which seemed to be uncommon in N. Spain), *Gymnocarpium* *dryopteris* and *Oreopteris limbosperma*. By a stream, we found a stand of large specimens of *Dryopteris oreades*, and its hybrid with *D. filix-mas*: *D.* x *mantoniae*. Predictably, we spent some time debating the recognition of this hybrid! As we ascended to the edge of the tree line, we found a number of sink holes with *Athyrium distentifolium*, with their fronds (some very large) lying characteristically flat. We continued our walk into the Picos, enjoying some spectacular scenery. Limestone ferns seen included *Asplenium trichomanes, A. trichomanes-ramosum (A. viride), Polystichum aculeatum, P. lonchitis, P.* x *bicknellii* and *P.* x *illyricum*. The two hybrids were determined with the assistance of Ronnie's microscope, which he and I took turns in carrying in the mountains. In fact, Ronnie was prone to weigh himself down (with photographic and other gear) like a pack horse, but then behave as if he was a mountain goat! We sometimes had difficulty keeping up!

As Rémy Prelli and his family were leaving the next day, we had our 'farewell meal' that evening, with all the party eating at the Hotel Favila.

Monday 24 August. In the morning, we explored limestone cliffs and valleys around Puente Poncebos (Site 10), which is in the north of the central part of the Picos. In the village itself, stands of *Adiantum capillus-veneris* clothed dripping cliff faces, and a large stand of *Woodwardia radicans* could be seen overhanging the far side of the river. From the village, we took a circular walk of about 2km, initially up a very steep path to another village, Camarmena, perched on the mountainside. Being a very hot day, the cafe at the top of the hill provided most welcome refreshments, and the opportunity for a short rest with splendid views. En route, we had seen some fine specimens of *Asplenium ceterach*, as well as *A. ruta-muraria* and *A. trichomanes*. We worked our way down the hill to the Rio Cares valley, the most popular walk in the Picos, with many people making the trek that day. A short foray in this region was relatively unproductive, except for the spotting of one specimen of *Phegopteris connectilis*, which is at the southern extremity of its distribution in Spain, and rather rare as a result. We returned to Puente Poncebos, and after lunch, drove to Sotres.

After parking the cars on a track south of Sotres, we walked south towards Vegas del Toro, and spread out to explore the Rio Duje, as well as the valley sides (Site 11). Habitats here were cliffs, caves and overhangs, with very many specimens of *Asplenium trichomanes*. We were uncertain of the subspecies involved, but Ronnie spent quite some time in intensive study here, so may have a few ideas! [Yes! subsp. *pachyrachis* and hybrids.] Although we did see other ferns in this limestone area, on the whole, diversity was low, and eventually we succumbed to the intense heat to head for a nearby cafe and more welcome refreshment.

Tuesday 25 August. This was the end of our field meeting to Northern Spain, and we departed on our return journeys.

We would like to thank Patrick Acock and Ronnie Viane for organising the British and Spanish sides respectively. Pat coped admirably with the many uncertainties in the early stages of planning. Ronnie gave a lot of time and effort both before and during the meeting, and we are most grateful to him for making the week so enjoyable.

Successful field meetings abroad are now becoming an established feature of our programme, and I look forward to more. Particularly enjoyable would be the prospect of viewing the Macaronesian flora in its home range!

Reference: VIANE, R., MAYOR LOPEZ, M. & JERMY, C. 1987. The systematics and ecology of the Pteridophytes of northern Spain. Excursion no. 39, XIV International Botanical Congress, Berlin: 56pp.

Table of Ferns Recorded in Northern Spain

Site Number	1	2	3	4	5	6	7	8	9	10	11
Adiantum capillus-veneris		R						O		C	R
Anogramma leptophylla				R							
Asplenium adiantum-nigrum	O	O	F	O	O	R	O	O	R	O	
A. ceterach	R			O	O					F	
A. marinum			R								
A. obovatum ssp. lanceolatum (A. billotii)		R	O	F							
A. ruta-muraria	O					F		F		F	O
A. scolopendrium	R	C			O	R	O			O	
A. trichomanes agg.	O	O		O	R	A		F	C	F	A
A. trichomanes-ramosum (A. viride)						F			C		
Athyrium distentifoliuum									O		
A. filix-femina	O	C	O		F		C	F	F		
Blechnum spicant	F	C			O		F	F	F		
Botrychium lunaria						R					
Cheilanthes hispanica				F							
Culcita macrocarpa							F				
Cystopteris fragilis					F	A			O		O
C. diaphana		R			O						
Davallia canariensis			F								
Dryopteris aemula	F	R					R				
D. affinis agg.	F	A	O		F	R	C	C	F		
D. corleyi								F			
D. dilatata	F	C			R		F	F	C		
D. filix-mas						R			F		
D. guanchica	O	O									
D. oreades									O		
D. submontana						C					
D. x asturiensis								R			
D. x mantoniae									R		
Equisetum arvense		O			R	F		O			
E. fluviatile									O		
E. telmateia		O									
E. x litorale								O			
Gymnocarpium dryopteris									F		
G. robertianum						A					
Hymenophyllum tunbrigense		O									
Oreopteris limbosperma		O			R		O		C		
Osmunda regalis	O	C	O				F	F			
Phegopteris connectilis										R	
Polypodium cambricum			O				O	O		O	
P. interjectum	R		O		O		O				
P. vulgare	O	O		O	O	O	O		R		
Polystichum aculeatum	R					C			C		R
P. lonchitis						F			F		
P. setiferum		A	R		C	O	C	C		F	
P. x bicknellii						R			R		
P. x illyricum									R		
Pteridium aquilinum	F	O	O		F	F	O	C	F	F	
Selaginella selaginoides						O			O		
Stegnogramma pozoi		O					R				
Trichomanes speciosum		F									
Woodwardia radicans		O								O	

The letters in the entries represent abundancy notations as follows -

A = abundant, C = common, F = frequent, O = occasional, R = rare

NORTH DEVON - 23-27 September

Peter D.A. Boyd

Thirty-two people attended this meeting, most of whom met on Wednesday evening at the Cedars Lodge Inn, Barnstaple, for a briefing from Peter Boyd who had organised the programme.

Thursday 24 September. The first day started with a visit to the Museum of North Devon, Barnstaple, to view the displays on the Victorian Fern Craze and the unique collection of Victorian objects using ferns as the dominant decorative motif built up by Peter Boyd, the Curator, over a period of about six years. A special exhibition of fern herbaria, fern books (including a series of Jones' Nature Prints) and ferny objects not normally on public display had also been prepared for the visit. A group photograph was taken on the steps of the museum.

After coffee, the group proceeded in convoy to Kentisbury Church (21/623 438). Ferns carved in stone were examined in a Victorian extension inside the church and *Asplenium ceterach* and other typical species of mortared walls were seen on walls near the church. A large *Osmunda regalis* was admired in a garden and a plant of the same species was found growing (? wild) among the abundant *Asplenium scolopendrium, Athyrium filix-femina, Dryopteris dilatata, D. affinis, D. filix-mas, Polystichum setiferum* etc. lining the lane. The party then drove to a spot between Coulsworthy and Stony Corner (at 21/621 455) on the road to Hunters Inn to examine abundant *Asplenium adiantum-nigrum* in a typical 'Devon bank' habitat.

photo: Tony Freeman Press Agency, Barnstaple

Barnstaple, outside Museum of North Devon

Back: Neil Timm, Cyril Morgan, Rob Cooke, Martin Rickard, Andrew Leonard, Betsy Kohler, Ray Smith, Dorothy Fortune, Keith Holly, June Walsh, Elise Knox-Thomas, Alf Hoare, Gavin Stark, Trisha, Linda & Mick Craddock, Jennifer Ide.

Front: Primrose Peacock, Graham Ackers, Hazel Rickard, Lindi Wilkinson, Brenda Smith, Huldah Knox-Thomas, Doreen Holly, Vera Horner, Mark & Clare Kitchen, Peter Boyd.

The party then made its way by car over the heather moorland of Holdstone Down, stopping briefly (at 21/634 481) to consider the diverse fern habitats of sea-cliffs, moorland and deep wooded valleys of Exmoor visible from there. Then on down into the spectacular Trentishoe Combe and the Heddon Valley, past Hunters Inn (21/655 482) then up again out of the valley past luxuriant woodland ferns to Martinhoe and the National Trust car park at Woody Bay (21/675 487). From there we walked along the road towards the Woody Bay Hotel (21/680 488), where lunch had been booked, studying the ferns on the way. *Dryopteris aemula* is a speciality of the area. Charles Druery found several interesting varieties of *Blechnum spicant* here in the 1880s but while the species is abundant, only one unusual specimen, attempting to be serrate, was noticed. After lunch, *Asplenium ceterach* was observed on the walls below the hotel and the walk continued to make a round trip through the steep woodlands of Woody Bay back to the car park. These woodlands are rich in species and Martin Rickard found a large colony of *Hymenophyllum tunbrigense*, hitherto unrecorded. Unfortunately, parts of it had been sprayed with herbicide to kill stumps of *Rhododendron ponticum*, leaving ugly brown patches of dead filmy fern – the rhododendron is probably more resistant than the *Hymenophyllum*! The two species of *Hymenophyllum* were collected to extinction in many parts of Devon during Victorian times and it was good to see such a large expanse surviving.

The party then returned to the Heddon Valley to visit Peter Boyd's three acre ferny woodland garden (in the making) at Milltown Cottage (21/656 478). He has a growing collection of the cultivars of British fern species, including plants of *Athyrium filix-femina, Asplenium scolopendrium* and *Polystichum setiferum* from old gardens in North Devon and the F.W. Thorrington and Bolton collections. A very good distinct crisp form of *A. scolopendrium* found in a North Devon quarry and a fine large 'Projectum' form of *A. scolopendrium* found in a Victorian garden in Ilfracombe were particularly admired by certain members. Peter Boyd is successfully propagating various scollies in his collection by frond bases and showed some at different stages of development.

Following dinner at the Cedars Inn, Martin Rickard gave an illustrated talk on his trip to study ferns on the island of Nevis in the Caribbean.

Friday 25 September. The meeting point for the second day was on Exmoor at Dry Bridge, Brendon Common (21/760 455). The air, weather and the autumn colours of the moor were beautiful and the walk down the combe beside the stream to Farley Water (21/748 453) was a delight. The main purpose of the visit was to see a habitat dominated by *Oreopteris limbosperma* in contrast to the other habitats seen during the meeting. *Drosera rotundifolia* (sundew) and other bog plants added to the interest of the area.

From here the party made its way off the moor down into the gorge of the East Lyn River at Watersmeet (21/743 486), an area known to the Victorians as 'the Switzerland of England' where the diversity and abundance of fern species typical of North Devon valley woodlands was met again. Lunch was eaten at the National Trust Visitor Centre. Close-by, in Barton Wood, a fine colony of *Hymenophyllum tunbrigense* was examined and members of the party were privileged to be shown mats of *Trichomanes speciosum* gametophyte (possibly hundreds of years old) by Robert Cooke who had found them (with the help of his torch) while others were eating. Further upstream along the East Lyn, Martin Rickard was able to show us a fine colony of *Hymenophyllum wilsonii*, the only one known in North Devon.

On leaving Watersmeet, the party drove down the gorge to Lynmouth and then up to

Lynton and walked to the site of Edmund Gill's Fernery (21/719 494). Edmund Gill ran one of the three specialist fern nurseries which operated in North Devon during Victorian times (see Boyd, 1992). Lynton Church was also visited to see a hart's tongue and a ?male fern carved on a Victorian gravestone in the churchyard.

On the way back to Barnstaple, a detour was made to the spectacular Valley of the Rocks (21/707 498) west of Lynton to search for the *Asplenium marinum* reported to be there. While good impressions were given by members of the party of the wild goats which live there, only some rather fleshy forms of *A. adiantum-nigrum* were found. One small party, still not satiated, detoured south-eastwards into Somerset, near Simonsbath, to visit a *Phegopteris connectilis* site - a species which cannot now be seen growing wild in North Devon.

After dinner, Peter Boyd gave an illustrated talk about the Victorian Fern Craze in North Devon and the history of the North Devon Museums Service.

Saturday 26 September. The third day was another contrast. The party were taken by coach to Ilfracombe to board the ship for Lundy Island. The M.S. *Oldenburg* sailed from Ilfracombe Quay (21/526 479) at 10.30 a.m. and was due to reach Lundy at 12.45 p.m. However, the sea conditions made it impossible to land because the small boat which transfers visitors to the shore could not be launched from the island. Rather than just wait offshore the M.S. *Oldenburg* sailed right around Lundy giving views of the island which visitors do not normally get. When we returned to the bay off the landing beach conditions were still difficult but after several attempts groups of visitors were off-loaded into the bucking boat and taken to the shore. Visiting Lundy can be quite an experience!

Close to the landing beach good specimens of *Asplenium marinum* were examined but time was now short and a forced march was necessary along the top of the cliffs on the east side of the island to reach the long-disused granite quarries where *Osmunda regalis* grows out of vertical fissures and a particularly crispy form of *Dryopteris aemula* is abundant. Knowing that the party could now get back to the boat in time before it sailed, the leader relaxed the pace and the party were able to walk back from the Half-way Wall (21/136 456) along the middle of the island and visit the shop and Marisco Tavern to buy Lundy's own postage stamps etc. The last boat left shore at 4.30 p.m. - nearly without the leader whose pace had become too relaxed looking at *A. marinum* again!

The M.S. *Oldenburg* sailed for Bideford and about an hour and a half later passed close to the famous Braunton Burrows Nature Reserve before making its way up the River Torridge to Bideford Quay (21/455 266) where the coach was waiting to return the party to Barnstaple.

Sunday 27 September. Holy Trinity Church, Ilfracombe (21/514 473) was the meeting point for the final morning. This was the church of the Rev. John Mills Chanter, well-known Victorian pteridologist whose wife, Charlotte Chanter, wrote *Ferny Combes - A Ramble After Ferns in the Glens and Valleys of Devonshire* in 1856. Their plain gravestone was found but the churchyard was mainly visited to see some of the Victorian gravestones which boast carved ferns - one with crested *Asplenium scolopendrium* in marble. A walk from the church took us to the site of John Dadds's Fern Nursery at Langleigh (21/511 469) which thrived from the 1860s to 1880s (see Boyd, 1992). There was not time to visit the site of John Lewis's Fern Nursery at Slade because the last excursion was to be to a site on the coast only accessible at low tide.

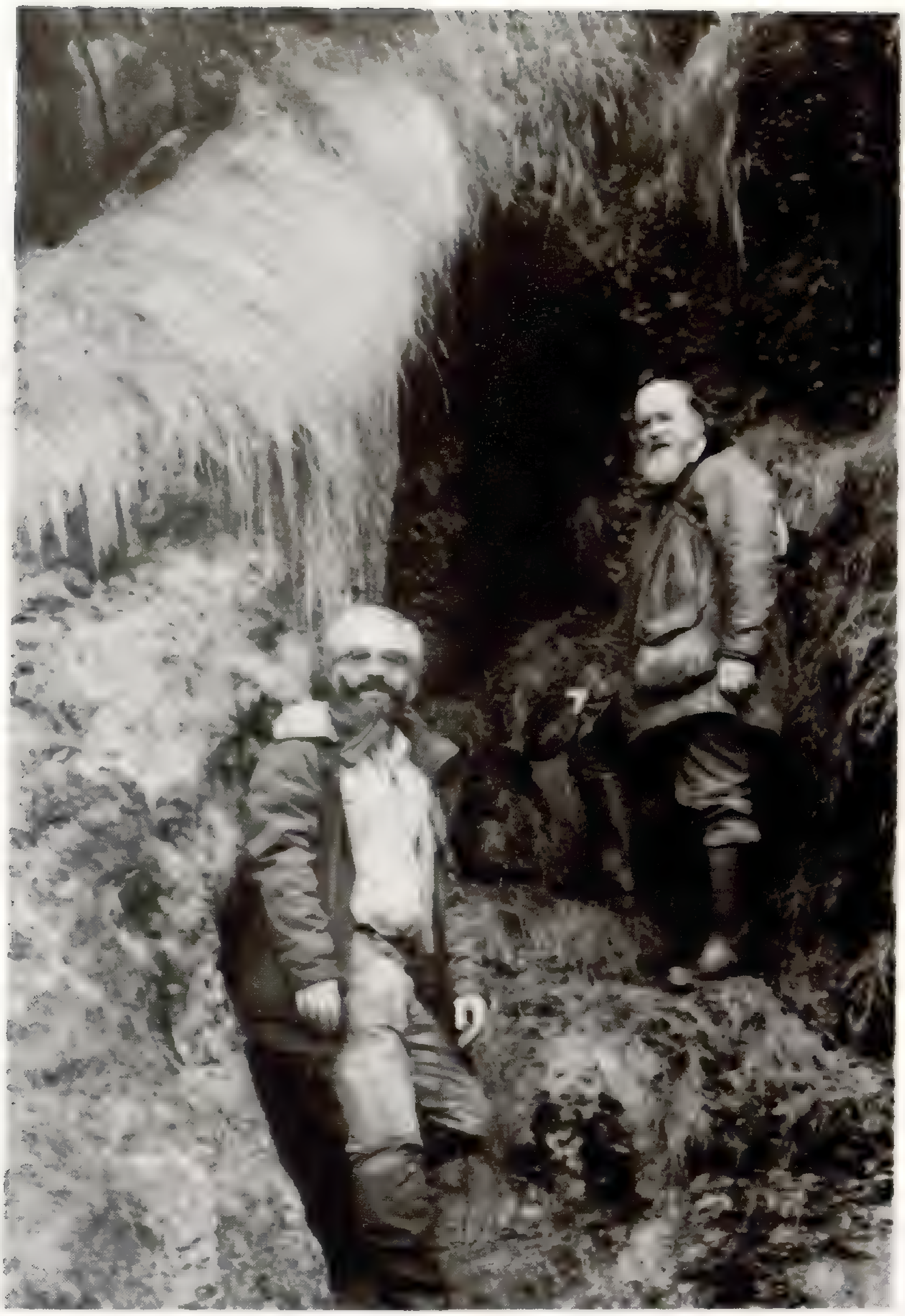

photo: A. Leonard

Anthony Pigott and Peter Boyd at *Adiantum capillus-veneris* site, North Devon

The group moved on to park where access was possible to the Torrs Walks (21/508 475) on the west side of Ilfracombe. Martin Rickard had visited the site before so led the party down the cliff and along the beach to find maidenhair fern, *Adiantum capillus-veneris*, growing in tufa near sea-level. At first the site could not be found, but eventually, most members were able to see what was very much a North Devon speciality last century and far more widespread in the Ilfracombe area. However, concern was expressed for its survival as early as the 1860s because of over-collecting. This site was first recorded in early Victorian times and it was a great pleasure to see it still surviving because of its inaccessibility.

Not all the fern species seen during this meeting have been mentioned. The richness of North Devon in species and abundance of many of them was demonstrated to those who attended and we were blessed with good weather for most of the time. It was a very enjoyable few days – even for the organiser!

Reference: BOYD, P.D.A. 1992. The Victorian Fern Cult in South-West Britain. pp.33-56. in IDE, J.M., JERMY, A.C. & PAUL, A.M. (eds) *Fern Horticulture: Past, Present & Future Perspectives.* Intercept, Andover.

REGIONAL MEETINGS 1992

MIDLANDS

A.R. Busby

'Welcome to Spring' Flower Show, Knowle - 18-19 April. Our stand at this show has become something of a tradition, due entirely to the kindness of the show secretary, Mrs Doreen Watson of the Solihull Horticultural Society. The show is staged in partnership with the National Daffodil Society and half of the show is devoted to a competitive show, of national standing, for daffodils. Classes 150 and 151 are for potted ferns and in the hope of encouraging more people to grow and display ferns, I decided to continue providing extra prize money for these classes. However, although it attracted extra exhibitors last year, I was disappointed to see that it failed to maintain the numbers this year. The class results were:
Class 150 One Pot Fern: 1st - Mr D. Wood with *Athyrium niponicum* var. *pictum*, 2nd - Ms M. Leese with *Davallia* sp. and 3rd - Mrs B. Smith with *Platycerium bifurcatum*.
Class 151 Three Pot Ferns: 1st Mrs B. Smith with *Pellaea rotundifolia, Asplenium trichomanes* and *Lunathyrium japonicum*.

My thanks to Ray Smith for helping with the Society stand and to the local members who called in to give us moral support.

Ray and Brenda Smith's Open Day - 7 June. Twenty-two members gathered on a Sunday afternoon at Ray and Brenda's home in Solihull near Birmingham. Our hosts had made several changes to their garden since our last visit. Borders had been enlarged, a shading pergola had been erected at the far end of the garden and Ray had acquired a greenhouse. As a regular exhibitor at flower shows, Ray finds that the extra provision of shade and weather protection helps to keep many of his pot grown treasures in the peak of condition. Ray explained that he had found that using the same plants for the show bench year after year proves debilitating to the plants. It is better to give them a rest from time to time. Brenda had furnished the garden with a wide range of interesting perennials and shrubs and her long-established raised bed had many more alpines added to it. The next big job in the garden would be to lift and divide several of Ray's original ferns. As Ray pointed out, it will be a mammoth task just to get the plants out of the ground.

During the afternoon, members were invited to visit the garden of Anne and Harry Adshead in nearby Olton Road, Shirley. This small garden, adjoining a Victorian terraced house, was most attractive with a wide selection of shrubs and perennials and a water feature which added a lively focal point to the whole garden. Amongst the plantings, there was a selection of hardy ferns, undoubtedly due to Ray's influence.

Our thanks to Ray and Brenda for providing another interesting day made all the more enjoyable by Brenda's superb refreshments, and special thanks to Anne and Harry Adshead for kindly allowing us to visit their garden during the day.

Oxford - 20 June. Twenty-one members assembled for a visit to the University of Oxford's arboretum at Nuneham Courtney, led by Nick and Eleanor Hards. Amongst the magnificent tree and shrub plantings, which included large rhododendrons, we saw some fine clumps of British and foreign hardy fern species and their varieties, notably various forms of *Athyrium filix-femina* and *Dryopteris filix-mas*, and also *D. affinis, Blechnum spicant, Polystichum setiferum* and *Osmunda regalis* near a lake. The foreign hardy ferns were represented by *Dryopteris erythrosora, Polystichum munitum* and *Athyrium niponicum* var. *pictum*.

photo: courtesy A. R. Busby

Midland group members at Nick and Eleanor Hards' home

Back: Clive Brotherton, Margaret Nimmo-Smith, Malcolm Hancock, Jeff Whysall, Brian Applebee, Matt Busby, Alan Ogden, Ray & Rita Coughlin, Ray & Brenda Smith, Linda, Trisha & Mick Craddock. *Front:* Nick & Eleanor Hards, Linda Hancock, Margaret Busby, Judith Whysall, Doreen Brotherton, John & Margaret Collins.

After lunch, taken at a nearby pub, we moved on to spend the afternoon at Nick and Eleanor's home in Didcot. The garden had a wide expanse of lawn with two large perennial herbaceous borders. Along the south perimeter stood a large hedge providing some shade for Nick's ferns and other shade-loving plants. Near the house was a selection of plants in tubs and containers. The conservatory and living room were furnished with some interesting indoor ferns. The weather was perfect and a group photograph was taken, copies of which may be obtained from Matt Busby. The day ended with a delicious tea provided by Eleanor. Our thanks to both Eleanor and Nick for a memorable day.

Olive Mason's Open Day - 9 August. On this Sunday morning, 17 members assembled at 28 Hillgrove Crescent, Kidderminster, to visit Mrs D. Terry's garden. The Victorian terraced house had a garden that provided much interest for everyone. It was predominantly a spring garden, with trees, shrubs and well stocked herbaceous borders, including several hardy ferns. The garden is also open under the 'Yellow Book Scheme' and is well worth visiting.

After lunch at a pub, we gathered at Olive and David Mason's garden at Chaddesley Corbett. Here we saw a very new garden which had been designed to complement the new house. New plantings of trees and shrubs were softened by the careful use of many British and foreign hardy fern varieties. A secluded walled garden with an attractive water feature had been designed with ferns very much in mind, but, as Olive pointed out, there is plenty of scope for more ferns. The real surprise and delight of the visit was a conducted tour of David's passion, his collection of restored agricultural engines and implements, which is housed in a large garage and workshop next to the house. The day ended with superb refreshments. Our thanks to Olive and David Mason for a splendid day's meeting.

LEEDS & DISTRICT

Eavestone Lake, near Pateley Bridge, North Yorkshire – 14 June. The weather was beautiful and it prompted a total of thirteen members to meet at Eavestone Lake. It was an ideal place for the season's first trip, as the going was easy and fairly level. The morning was taken ambling round this man-made lake where we found *Dryopteris affinis* subsp. *affinis* and subsp. *borreri, D. dilatata, D. filix-mas, Athyrium filix-femina, Blechnum spicant* and *Equisetum fluviatile.* Two plants of *Asplenium adiantum-nigrum* had been seen here at an earlier date, but we were unable to find it on this trip. The weather had been very hot and dry for a few weeks prior to this date.

We had our lunch at a local inn after which we continued on to the western side of Pateley Bridge to Trollers Gill, near Appletreewick. Leaving our cars on the grass verge we worked downhill past some very interesting limestone outcrops where we saw *Asplenium ruta-muraria, A. trichomanes* subsp. *quadrivalens* and *Cystopteris fragilis.* Further on we passed some old disused lead workings and eventually arrived at the Gill. This could be described as a sheer-sided ravine of limestone. The beck has long since disappeared underground for a distance of about half a mile. Here we saw most of the common lime-loving ferns such as *Asplenium ruta-muraria, A. trichomanes* subsp. *quadrivalens, A. trichomanes-ramosum (A. viride), A. scolopendrium, Cystopteris fragilis* and *Polypodium interjectum.* Down on old pot-hole we could see *Dryopteris filix-mas* and a beautiful plant of *Polystichum aculeatum* which was growing well out of reach of the sheep. By the stream, after it had appeared above ground again, we found *Equisetum arvense.* Of course, at both of the sites visited there were the usual stands of *Pteridium aquilinum.* The leader for this day was Jack Bouckley.

Jack Bouckley

Surrender Ground and Hard Level Gill, Swaledale, North Yorkshire – 4 July. A stalwart band of four members met at Surrender Bridge near Reeth in somewhat unpleasant conditions, albeit considerably better than the previous extremely wet day, a fact which doubtless kept many, understandably, indoors! The first part of the trip took us into the mining grounds of the Surrender Company, and proved particularly barren; even bracken appeared to eschew this habitat, although grew freely near the roadside. However, isolated specimens of *Cystopteris fragilis* and *Asplenium trichomanes* subsp. *quadrivalens* were eventually discovered with rather stunted *Dryopteris filix-mas,* in the remains of hushes (water-eroded trenches used by the miners to search for lead ore, some of spectacularly large dimensions especially in Arkengarthdale). Surrender Ground is a bleak area of old tips, and revealed nothing of pteridological interest.

It was not until we reached Flincher Gill that more discoveries were noted, namely *Dryopteris dilatata, D. filix-mas, Equisetum fluviatile,* and *Blechnum spicant.* Lunch was taken at Level House, a one-time lodging for miners, now ruinous, and we then carried on downstream, now called Hard Level Gill. The pièce de résistance came at Hard Level Force, a delightful waterfall in a narrow limestone gorge, definitely a place to linger in warm weather. Here, the greatest variety of ferns was found growing in the limestone crevices including *A. trichomanes, A. trichomanes-ramosum (A. viride),* and *A. ruta-muraria,* this last for once in a 'natural' habitat, with fine specimens of *Polystichum aculeatum* and *Polypodium interjectum.* A careful search below the fall itself failed to reveal further species alas.

Progressing towards the Old Gang Smelting Mill, recently consolidated by the Yorkshire Dales National Park Authority, we saw *Athyrium filix-femina* and two more horsetails, *E. palustre* and *E. arvense*. It was at the Mill that I had seen the emerging fronds of *Botrychium lunaria* in mid-May, and had been given reports of *Ophioglossum vulgatum* by the stream. Unfortunately, all efforts to locate these plants proved singularly unfruitful, a great shame since this would have been a tremendous finale to the day, and we were left to surmise that they had either been grazed by sheep, or had died down early because of the very dry weather (prior to our trip it must be pointed out!).

Once again, and despite the wet, a most enjoyable day out in the Yorkshire Dales.

Richard Lamb

North Humberside and Lincolnshire - 9-10 August. On this Saturday, seven plus the leader, Neil Timm, met at Messingham Sand Quarry, North Humberside, to see a very good and extensive stand of *Pilularia globulifera*, a plant which some of the group had not seen before. We then moved to Laughton Forest. The weather by now had become typical ferny weather ... wet! The ferns found in this wooded area were *Dryopteris affinis, D. carthusiana, D. dilatata* and *Oreopteris limbosperma*. The party then headed for lunch in the village of Walesby, near Market Rasen, Lincs., where *Asplenium adiantum-nigrum, A. ruta-muraria* and *A. scolopendrium* were seen growing on walls. After lunch it was still raining heavily so it was decided to change the afternoon programme. A mill race and another wall site in Walesby were visited to see *A. ruta-muraria* and *A. scolopendrium* again plus *A. trichomanes* subsp. *quadrivalens*. Neil then took us to his home and nursery at Binbrook in the Lincoln Wolds where we saw some very interesting ferns including *Athyrium filix-femina* 'Plumosum Druery'. After doing justice to refreshments provided by Neil and his parents over a chat, we called it a day, arranging to meet again at the nursery the following morning.

After a night of thunderstorms and torrential rain, which would have done justice to any rain-forest weather, we met again and went to Willingham Forest near Tealby. The ferns found in this interesting area were *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis, D. carthusiana, D. dilatata, D. filix-mas* and *Polypodium vulgare*. Neil and the rest of the group had been particularly interested in finding more *D. affinis* for the Affinis Watch but we were unlucky. By now the undergrowth was drying out and we went off to explore Minting and Haddon Woods, stopping on the way for refreshments at Neil's 'local'. There were no few finds in these woods but *D. affinis, D. carthusiana, D. dilatata* and *D. filix-mas* were again seen.

This was a total of eleven different species in a county which is not very well known for its pteridophytes, ample proof that all areas are worth a visit.

Jack Bouckley

Brignall Banks SSSI, Teesdale - 5 September. Brignall Banks SSSI occupies some 85ha of land bordering the often steep-sided valley of the river Greta (45/063113) which runs roughly east/west. I had visited this site on a number of previous occasions, and had found the fern flora particularly interesting. However, one species found on the first visit had eluded all subsequent searches. This was *Phegopteris connectilis*. Hence, one of the aims was to confirm this earlier sighting using more pairs of eyes.

Our route followed Gillbeck to the river Greta, went west to another tributary (Gregory beck), and back to the bridge via Scargill castle. The walk started well, being way-marked and easy walking. The quantity of ferns increased as we walked, *Dryopteris filix-mas* being the most abundant, with some clearings being dominated by *Pteridium aquilinum*.

The further we walked the more diverse and interesting the fern flora became. A good stand of *Equisetum telmateia* was seen across the beck on a base-rich flush. This was but a foretaste of what was to follow. Further on we found *Athyrium filix-femina* and a few small plants of *Polystichum aculeatum,* again implying the presence of some base content. However, the rocks looked distinctly more like sandstone. This was borne out when the first clumps of *Blechnum spicant* were spotted.

At this point the main path left the stream and went up the valley side. Three of the party took this route leaving the more intrepid (foolhardy?) explorers to sample the pains and pleasures of 'the low road'. On leaving the main path and scrambling over the first fallen tree blocking our path, the curious mix of acidic and calcareous fern floras continued to reassert itself with patches of *Blechnum spicant* only a few metres away from *Asplenium scolopendrium, Polystichum aculeatum* and *Athyrium filix-femina.* Further down, the first examples of *Dryopteris affinis* (morphotypus various) were found.

The high humidity of the gill was reflected in the abundance of mosses and liverworts, including the *Hymenophyllum* look-alike, *Plagiomnium undulatum.* A number of ferns grew epiphytically on bryophyte-cloaked rocks and logs, including *Polypodium vulgare* and, unusually, *Dryopteris dilatata.* At one point, on the western side of the valley, calcareous water seeping out of the rock supported *Cystopteris fragilis* and produced a flush with a localised build-up of tufa. Just below this point, on the eastern bank was a large, but scattered colony of *Gymnocarpium dryopteris* intermixed with *B. spicant.* It was in this area that *Phegopteris connectilis* should also have been. However, an exhaustive search proved fruitless. After more scrambling over trees the river Greta was finally reached, just in time for lunch. The 'main' path was then rejoined and followed upstream. Various cliffs were encountered with varying degrees of ferny interest. A further colony of *Cystopteris fragilis* was found.

On arrival back at the starting point the party departed in various directions leaving the leader even more determined that the *Phegopteris* must be there somewhere. And, after much searching, wailing and gnashing of teeth, the soft, downy fronds, all seven of them, were located under an ash tree not two metres away from where we had passed some four or five hours earlier. Honour intact, the day ended with another good ferny spot being added to the list.

Barry Wright

Jack Bouckley would like to thank all those who have contributed to these meetings, either by organising and/or attending them.

WESSEX

J.E. Jarvis

Avon Gorge, Bristol – 21 June. Led by the warden of Bristol University Botanic Garden and Martin Cragg-Barber, we walked down Nightingale Valley from the car park to the river bank and back again. It was warm and we could hear the buzzards that were riding the thermals above us. We saw *Cystopteris fragilis,* happy on a very dry wall, a crested *Polystichum setiferum* (of garden merit) by the side of the path and, as a diversion, *Orobanche hederae* by the river. Some people are fascinated by broomrapes. There were *Polypodium interjectum* and *P. cambricum.* The geology of the area is complex, much more complex than the limestone cliffs by the Suspension Bridge suggest, but it was possible to make some sense of the fern distributions, from *Asplenium scolopendrium* to *Blechnum spicant,* with the aid of a map.

Forest of Dean - 2 August. Last year's walk in the Dean was an hard act to follow, so we set out from the Speech House car park to explore the other side of the Cannop Valley, knowing that we were going to have to *look* for ferns. We found some, not a lot, before we reached the brook: *Equisetum arvense* with branched branches (the second one I had seen this year), *Athyrium filix-femina* and *Dryopteris affinis*, all losing out to the drought, and bracken. When we reached the brook we searched for *D. carthusiana*, which we had not seen last year, and eventually found two plants.

After lunch by Cannop Ponds, Martin Cragg-Barber showed us the *Equisetum sylvaticum* he had been shown last year. We walked on to the Stone Works then started the long uphill haul across Russell's Inclosure to the Speech House. It looked most unpromising, a regimented conifer plantation with the odd token broadleaf tree, but there were plenty of ferns in the drainage ditches, in little clearings and, surprise, surprise, lots of *D. carthusiana* looking just like its pictures in text books.

Lower Woods SSSI, Wickwar - 6 September. The drought had broken and it was raining on and off when my wife and I walked round the Lower Wetmoor Wood Reserve (Gloucester Trust for Nature Conservation). The wood is a relic of the ancient oak woodlands of the Severn Valley floor, which survived the Second World War because of the difficulty of extracting the cut timber. On that Sunday it was easy to see why and to consider the reserve well named.

The Reserve suffers, as does Midger *(BPS Bulletin* **4**(2): 82), from the effects of coppicing which does not seem to help the fern population. We saw a lot of *Polypodium interjectum* and *Dryopteris dilatata* on trees and logs, and *D. filix-mas* but no *D. affinis* and no *Polystichum setiferum. D. carthusiana* and *D. dilatata* were growing side by side but we did not find their hybrid. Some time was spent spotting wild service trees and we found green wood cup fungus with fruiting bodies. We got very muddy but not too wet and set off for home just before the skies opened.

SOUTH-EAST

Selborne, Hampshire - 20 June. Old and new friends were greeted in the car park at Selborne by Sir Henry Peto. This splendid site, with a very mixed geology has been well documented since Gilbert White's time for flowering plants and wildlife in general, but ferns have not had more than a cursory mention.

The morning session was led by Paul Ripley who had kindly carried out an early morning reconnaissance when our leader had to pull out at the last minute. Some very fine *Polystichum setiferum* and *P. aculeatum* were seen growing close together in the lane banks and ditches. On climbing up the back pathways to obtain breathtaking views of the surrounding countryside, a *P. setiferum* 'Divisilobum' was seen outside a garden but it had been partially strimmed and farther on *Asplenium adiantum-nigrum* was seen growing well on a bank. A large clump of *Dryopteris affinis* subsp. *affinis* was seen above the wood we now dropped into. Here the ground flora consisted of vast tracts of *P. setiferum* and *A. scolopendrium* with some large mature *D. affinis* subsp. *borreri*.

After lunch we went to Sir Henry's house where he showed us down into a steep-sided valley, where *D. filix-mas* and *D. dilatata* grew well under a few mature trees. Sir Henry had a novel way of stopping the encroachment of the dreaded ground elder, *Aegopodium podagraria*, and slugs and snails attacking the plants. Half-metre diameter circles of ground were enclosed by lawn edging plastic, set in the ground and kept clear of weeds. Once clear of weeds they were planted with a range of ferns which were kept free of slugs by continual slug baiting. Many of the plants seem to thrive in these oases. Those that succumbed, Sir Henry felt had been due to unsuitable habitat or ground conditions and would be replaced by another, hopefully more suitable, plant.

Sir Henry keeps a close record on computer of the plants he has. At the time of our visit he had around 250 ferns in cultivation and was expanding on the other side of the valley. Unfortunately we did not have the cultivar expert needed to check the authenticity of some of the plants. Sir Henry is also a keen fruit and vegetable gardener and we enjoyed being shown around this part of the garden and on to the greenhouse where many of us came away with small ferns.

We would like to thank Sir Henry, his wife and friend for serving us with a splendid tea to close the day.

Pat Acock

Kent Spleenwort Trail - 10 July. At 7.30 p.m. on this Friday, a small group of regular S.E. group members were joined by a few new faces and the Acock/Bucke families for a spot of auto-ferning. A tight half-hourly schedule was kept to.

At 7.30 we examined the wall of Bromley Common Church (51/423 665). Here we spotted *Polypodium interjectum, Asplenium ruta-muraria, A. adiantum-nigrum* and *A. trichomanes*. Below the wall, *Pteridium aquilinum* and *Dryopteris filix-mas* had been planted in a shaded part of the garden. The wall was being invaded by ivy and nettles and the quality of the spleenworts had fallen since our visit in 1986. *A. scolopendrium* had been lost due to repointing of the church wall.

At 8.00 we pressed on to Hayes church (51/406 663) to observe *A. ceterach* with *A. scolopendrium*. This colony, probably the best in the south-east was still doing fine. A very good *A. scolopendrium* 'Crispum capitatum' was observed and spores were collected by Peter Clare. At 8.30 we visited Petts Wood (51/448 684) for a long extant alien growing on the banks and in the tributary of the Kyd Brook, *Onoclea sensibilis*. This plant seems to be extending its range a little over the years but is still restricted to 14 fronds.

Grateful thanks were expressed to Grace Acock, Anne Bucke and their families for the refreshments served at 13 Star Lane at the end of the excursion.

Pat Acock

Avery's Wood, Speldhurst, Kent - 6 September. An overcast morning greeted the members who met at the roadside near the village of Speldhurst, close to Royal Tunbridge Wells. We set off on foot along the narrow Bullingstone Lane, beside which numbers of *Athyrium filix-femina, Dryopteris filix-mas, D. dilatata* and *Blechnum spicant* were seen, plus a couple of plants of *Asplenium scolopendrium* on a bank. A surprise find of a mature plant of *Polystichum aculeatum*, rare in the county of Kent, was made by Patrick Acock, on a slope just a few feet down from the side of the lane.

Before entering Avery's Wood, our leader, Peter Clare, pointed out a splendid crested form of *A. scolopendrium* growing by the corner of the public footpath. The wood contains fine specimens of *Polystichum setiferum*, two morphotypes of *Dryopteris affinis, and D. carthusiana* in a damper area by a stream, while a solitary narrow-fronded variety of *D. filix-mas* was admired by all present. Rain commenced as we made our way back to our cars, showed no sign of easing when we had driven a short distance to our lunchtime licensed premises, conveniently situated opposite the afternoon's venue, and when we emerged some time later it was definitely set in for the rest of the day.

Just over the county boundary into East Sussex, the High Rocks is a spectacular area of exposed sandstone, which provided shelter to Stone Age tribes and was a popular excursion place during the reigns of James II and Victoria. The damper sides of the cliffs are a nursery bed for hundreds of plants of *Dryopteris dilatata*, while an exploration of the tops of the rocks revealed two flourishing colonies of *Polypodium vulgare*. Other species found were *D. affinis* morph. *borreri* and another, possibly morph. *affinis*, *Pteridium aquilinum* of course, and carpets of *Blechnum spicant* adorned a bank in the woods on the east side. Alas, *Hymenophyllum tunbrigense* which gained its name after it was formerly found here, has not been recorded from the site this century, so it was only fitting that we should now travel to a similar but smaller sandstone exposure in nearby Eridge, to pay homage to a patch of the species growing high in a narrow cleft.

After the meeting we retired to our leader's house in Southborough, where waterproofs dried while refreshments were kindly provided by Jill Clare. Peter's garden was a delight to behold, providing inspiration to us all, with many fine ferns, several of them uncommon varieties, thoughtfully planted amongst attractive shrubs for maximum effect. An endless procession of pots of surplus ferns found their way into car boots. Many thanks go to the Clares for their hospitality, and to Peter in particular for planning such an entertaining day.

Howard Matthews

Riverhill House Gardens, Sevenoaks, Kent – 31 October. By kind permission of Mrs Rogers, sixteen members and friends met on a perfect autumn afternoon for a look at this very interesting garden, which is perched on the Greensand escarpment, overlooking the Weald of Kent.

The garden was laid out on a series of terraces, featuring specimen trees, roses and flowering shrubs, surmounted by a woodland garden underplanted with Rhododendrons, Azaleas, Japanese maples and other good things. The garden was very badly damaged during the hurricane of October 1987, and much of the tree cover was razed to the ground, exposing the once protected woodland plants, including *Dryopteris dilatata* and *D. filix-mas*, to the elements. The rose-terrace wall supported *Asplenium adiantum-nigrum* and *A. scolopendrium* and there were some large specimens of *Polystichum setiferum* enjoying the shelter of some shrub planting, and the benefit of lime, washed out of the adjoining masonry.

After our garden visit, we arrived at Paul and Linda Ripley's home, where, after a splendid tea, we enjoyed viewing members' slides of the year's ferning, including Moffat, the New Forest, northern Spain and Arizona!

Many thanks to Paul and Linda for their hospitality, to those members who brought their slides, and to everyone who came along and supported the meeting.

Peter Clare

EAST ANGLIA

Margaret Nimmo-Smith

Swiss Cottage Garden, Old Warden, near Biggleswade, Bedfordshire - 5 July. Seven members assembled in the car park outside the Swiss Cottage garden in the late morning to explore the wood outside the garden. As soon as we entered the wood, *Dryopteris filix-mas, D. dilatata* and *Athyrium filix-femina* were found, and solitary plants of *Asplenium scolopendrium* and *Polystichum setiferum* rapidly showed us that this was going to be a more interesting visit than was at first anticipated. The area of wood towards the lake and picnic area turned out to be devoid of ferns, but when we walked back towards the garden and the wetter part, past a large stand of *Pteridium aquilinum,* Anthony Pigott was delighted to find plants of *Dryopteris affinis* subsp. *borreri* morphotype *robusta* and *D. affinis* subsp. *affinis.* In the same area *D. carthusiana* was spotted. We were also delighted to find some very large plants of *Polystichum aculeatum* which were deemed to be the largest plants that experienced members had seen of this species. This area was in such close proximity to the garden that it led to the inevitable question of how truly wild were these old specimens.

The morning's fern exploration over-ran so that lunch was a hastily snatched sandwich in the car before assembling to visit the garden. The garden is notable for its many ornaments and edifices, with vistas at every turn and some interesting trees and shrubs. Various ferns were naturalised, including *Polypodium vulgare* on one of the bridges and *Equisetum arvense.* Anthony Pigott identified a plant of *Dryopteris affinis* subsp. *cambrensis* growing behind the actual Swiss Cottage. As this morphotype is not normally found in eastern Britain, it was thought to be an introduction. On our trip we met the warden who told us that the garden had a major problem with muntjak deer which had eaten many of the fern fronds down to the crown. He hoped to plant more ferns when the deer had been eradicated from the garden. The final attraction of the garden was the grotto which is planted with ferns, including varieties of *Pteris, Dryopteris, Polystichum, Athyrium* and *Asplenium scolopendrium* and also foreign hardy and near hardy ferns such as *Polystichum polyblepharum* and *Cyrtomium fortunei.*

The afternoon finished with a visit to the garden of Linda and Mick Craddock. Here was a garden, a conservatory and a greenhouse all full to bursting with ferns of every kind, all in excellent health. The indoor collection contained many species rarely grown by amateurs and some tree-ferns. Outside, young ferns were planted everywhere. If anyone complains of insufficient space he should pay a visit here. An excellent high tea rounded off in style a rewarding day. Thanks to Linda and Mick for their hospitality.

Arger Fen (52/934354) and Suffolk gardens - 19 September. Fourteen members, led by Rob Cooke, explored this acre of wood. A damp area at the perimeter provided us with *Dryopteris filix-mas, Athyrium filix-femina,* and *D. dilatata.* One of the specialities of the site is a very large colony of *Equisetum telmateia* which had unfortunately been rather flattened in the recent gales and rain, but in some sheltered areas one was still able to appreciate its magnificent size. Further exploration into the higher part of the wood led to the discovery of plentiful *D. carthusiana,* and several plants of *D. affinis* subsp. *borreri* morphotype *robusta* and *D. affinis* subsp. *affinis* were identified by Anthony Pigott. *Polystichum setiferum* and *P. aculeatum* were also found.

After a lunch-time drink at the nearest pub, the party assembled at Jenny Robinson's garden, Chequers, at Boxford. This delightful garden showed plenty of autumn colour with her large plantings of *Cyclamen* and many different *Colchicum* species. The stream running at the edge of the garden gave an excellent home to many ferns, including

photo: A.R. Busby

East Anglian group members at Jenny Robinson's garden, Suffolk

Trisha, Linda & Mick Craddock, Anthony Pigott, Vivien Green, Geoffrey & Marie Winder, Tim Pyner, Ada Stevens, Alf Hoare, Christina & Robert Bolton, Margaret Nimmo-Smith, Barrie Stevenson, Rob Cooke, Jennifer & Brian Cox

Matteuccia struthiopteris, Onoclea sensibilis, Polystichum munitum and other varieties of *Polystichum* and *Athyrium*.

Then it was on to Lewis Hart's town garden at Hadleigh where many rare and unusual garden plants were to be seen, beautifully tended. Every spare inch was used to good effect, including neighbouring passageways. Some good ferns were to be seen tucked into a shady corner. Mrs Hart very kindly gave us tea and cake which we were able to enjoy outside in the garden. Our thanks to Rob Cooke for leading the morning expedition, and to Jenny Robinson and Lewis Hart for kindly opening their gardens to us.

Garden Societies Fair, Gilmour Building, Cambridge University Botanic Garden (CUBG) - 25 October. Matt Busby very kindly helped me put on a display for the East Anglian Group at a special event organised by the Friends of the CUBG to promote local gardening clubs and organisations. The stand caused much interest and ferns, which had been very kindly donated by David Bannister, were rapidly snapped up to give the East Anglian group a firm financial base for the future.

A social afternoon, which included a slide show and plant swap, was held on 15 November in Cambridge. It was a most enjoyable way to round off the year's programme. With four very successful events this year under our belt, I feel the East Anglian Group is becoming firmly established.

SOUTHPORT FLOWER SHOW – 20-22 August

A.R. Busby

As in previous years, Jack Bouckley, Ray Smith and I spent three hectic days presenting our Society to the gardening public, answering, as best we could, many questions on ferns and fern growing. We were able to enrol two or three new members, and had the pleasure of meeting members who had taken the trouble to come along to say hello. We wish that more members would visit Southport, especially new members, so that we can meet and talk with them about their fern growing problems and successes.

The competitive classes provided some serious deliberations for the judges, especially the 'Championship Class' introduced last year. The number of entries remained about the same and we desperately need more exhibitors to fill the fern benches.

This year's judges were A.R. Busby and R.L. Godard-Key. The prize-winners are listed below.

Class 6	Individual Championship: Four hardy ferns, two greenhouse ferns, two hardy foreign ferns: 1st R.J. Smith, 2nd J.H. Bouckley, 3rd B. Russ (3 entries)
Class 7	Three Hardy British Ferns (dissimilar): 1st not awarded, 2nd R.J. Smith (2 entries)
Class 8	Three Foreign Hardy Ferns: 1st R.J. Smith (1 entry)
Class 9	Three *Asplenium scolopendrium* varieties: (No entries)
Class 10	Three *Polypodium* (distinct varieties): 1st J.H. Bouckley (1 entry)
Class 11	Three *Polystichum* (distinct varieties): (No entries)
Class 12	Three *Athyrium* (distinct varieties): (No entries)
Class 13	Three *Asplenium* (excluding *A. scolopendrium):* 1st R.J. Smith (1 entry)
Class 14	One British Fern (any kind or variety): 1st J.H. Bouckley, 2nd I. Rawson, 3rd R.J. Smith (3 entries)
Class 15	One Greenhouse Fern: 1st Mrs E.A. Gibbs, 2nd R.J. Smith, 3rd Mr & Mrs T. Melling (5 entries)

The 'Challenge Trophy' awarded to the exhibitor with most points in the fern clases, was won by R.J. Smith.

My thanks to J.H. Bouckley and R.J. Smith for helping with the staging and manning of the Society's stand.

I would welcome any enquiries about exhibiting ferns at the Southport Flower Show and will advise on the identification, growing and presentation of the exhibits.

SALVINIA WORKSHOP – 14 November

D. Kowalska

The BPS serendipitous workshop at Whitelands College, London, on the Salivinias of America given by Professor Elias de la Sota from Argentina proved to be very interesting and enjoyable. Nine people attended. Firstly, we were given an introduction to this group of plants. We then launched into some practical studies on the three American species *S. minima, S. herzogii* and *S. auriculata*. We studied the arrangement of hairs on the papillae. This is a diagnostic feature of different species. We then cut transverse sections of the leaf and studied them under high magnification using light microscopes. We were able to identify characteristic air chambers, hydropods (cells that absorb water) and conducting tissues. The workshop was very informative and gave those who attended the rare opportunity to learn about the Salvinias of America under the expert guidance of Professor de la Sota.

OBITUARIES

REGINALD KAYE 1902 - 1992

We are very sad to announce the death of Reginald Kaye on the 31st of August 1992 in his 91st year. Reg was a former President of the British Pteridological Society and few members can have had a comparable impact on the fern world. He was well known wherever ferns are grown - in Britain or overseas. He will be very greatly missed. Reg joined the BPS in 1929 and remained a member into his eighth decade, a record that will be hard to beat! He was the Society's longest serving member of all time.

Reg grew up in Huddersfield and even during his early years showed a keen interest in anything scientific, including photography and the construction of radio receivers. He had initially wanted to pursue a career in chemistry, but had no success finding appropriate employment. Collecting fern varieties had been a passion from his boyhood days and it was, therefore, no surprise when he devoted his time to growing plants and creating gardens. During his twenties he spent three years gaining valuable experience of horticultural work at the Ingwerson nursery near East Grinstead in Sussex, before moving with his wife Marion in about 1930 to Waithman's Nursery in Silverdale. There he set about building up the nursery we see today.

Soon after moving to Silverdale he acquired another nursery at Carlisle and leased additional ground in Silverdale to hold all his young plants. The business prospered. A scan through one of Reg's nursery catalogues from the thirties (Reg later dated it as 1938) is proof of that. Fern gems on offer then included *Asplenium trichomanes* 'Bipinnatum'; *Athyrium filix-femina* 'Acrocladon', 'Caput Medusae', 'Curtum', 'Fimbriatum Cristatum Garnett' and 'Kalothrix'; *Dryopteris affinis* 'Apospora Cristata' and 'Fimbriata Cristata'; *Polystichum lonchitis* 'Cristatum'; in all 108 cultivars and species were listed. Ferns were, however, only a small part of the total business; they accounted for just over two sides of a catalogue which ran to 96 pages.

The war seriously delayed progress in the nursery as production was switched to vegetable growing, but it was not long before the business was growing again. By 1957 his catalogue was again listing over 100 different fern species and cultivars.

Those of us who had the privilege of knowing Reg will long remember his cheery wit delivered with his Yorkshire brogue. A visit to Silverdale was a double pleasure - to chat with Reg and of course to have the bonus of touring his ferns and learning so many interesting tit-bits. His collection of fern cultivars was second to none. Most are listed in his book *Hardy Ferns* - the cornerstone of modern knowledge on the subject of hardy ferns in the garden. Reg must be thanked for saving so many cultivars from oblivion, his garden contains innumerable clones, many named, that might have been lost altogther had it not been for him. For example *Athyrium filix-femina* 'Acrocladon', 'Plumosum Druery', 'Plumosum Superbum Druery', *Polystichum setiferum* 'Cristato-gracile Moly', 'Rotundatum Phillips', 'Plumosum', *Dryopteris affinis* 'Ramosissima Wright', *Asplenium scolopendrium* 'Crispum Moly', 'Crispum Golden Queen', 'Drummondiae', 'Crispum Cristatum Bolton', *Polypodium australe* 'Semilacerum' might all have been lost. We are delighted to know that the collection will be in good hands in the future as Reg's grandson, Dominic, is keen to perpetuate the Kaye name in the fern world. He has already taken control of the collection and is once again producing ferns in the nursery.

In addition to preserving old cultivars, Reg introduced quite a few new cultivars of his own raising. Some of the better known examples are: *Asplenium scolopendrium* 'Laceratum Kaye', (Crispum group) 'Kaye's Superb', (Crispum group) 'Kaye's Splendour', (Marginatum group) 'Ingeborg', *Athyrium filix-femina* (Crispum Grandiceps group), 'Sabine', 'Nudicaule Kaye', *Adiantum pedatum* 'Miss Sharples' etc.

photo: M.H. Rickard

Reg Kaye, early 1991, at Silverdale collecting together the *Asplenium scolopendrium* cultivars he was providing for the RHS stand celebrating the BPS centenary at the 1991 Chelsea Flower Show.

Over the last seven or eight years Reg has been in frequent telephone contact with me doing research on a revised edition of his book. When he rang he always began with "Ulloh!", a very distinctive sound that was always a pleasure to hear – except perhaps late at night shivering in your pyjamas when he did not realise that not everyone shared his nocturnal hours! Sadly he was unable to do little more than initiate proceedings with the book, and even then some of his manuscript was lost in the post; all very frustrating. Fortunately, about six months before he died he asked Jimmy Dyce and me if we would be prepared to help him with this second edition. We were both very honoured to be asked and with Reg's, and Reg's family's agreement, Jimmy and I propose to get on with the job despite Reg's absence. Hopefully we will see the second edition published in a couple of years or so.

One of the great fascinations of Reg was the breadth of his interests. Obviously he was a gardener through and through; as well as owning the best collection of hardy fern cultivars he also owned one of the best, if not the best, collection of alpines. He was a founder member of the Lakeland Horticultural Society, the Scottish Rock Garden Club and the Alpine Garden Society. He served on the local council (Parish and District) as well as pursuing a very full private life in amateur dramatics, painting, sport etc. One of his stronger passions was playing the piano, even managing to squeeze a baby grand into his living room! One ambition he never realised was to build his own boat and sail around the world!

Earlier this year he was surprised and delighted when Lancaster University wrote and asked if he would accept an Honorary Master of Science Degree. Happily, a few weeks before he passed away, he was able to attend the Degree ceremony and receive his honour from Her Royal Highness Princess Alexandra. It is hard to think of a more appropriate way to end such a memorable life.

Martin Rickard

THOMAS DOUGLAS VICTOR SWINSCOW 1917 - 1992

It is with great sadness that we announce the death of Douglas Swinscow, a former Vice-President of the Society, on 24 September 1992.

Six months after qualifying as a medical doctor in 1940, Dougal (as he was known to his family and friends) joined the army in the Royal Army Medical Corp. He was involved in several campaigns during the Second World War. Soon after his demob in 1946 he was appointed a sub-editor of the *British Medical Journal*, eventually becoming deputy editor. Later, he declined the editorship and retired early at the age of 60 to have more time to study lichens. As a consequence of his very successful career with the *BMJ* he was invited to write his autobiography, a most readable and interesting book which was published as *Reap a Destiny* in 1989. While with the *BMJ* he also wrote *Statistics at Square One* (1976).

Dougal joined the British Pteridological Society in 1952 and remained a member for 40 years. Really Dougal's membership fell into three phases. Initially he was in the main stream of Society activities, frequently attending meetings. He was elected to the Society's Committee in 1954, and elected a Vice-President in 1958. He contributed many articles to the *British Fern Gazette* in the 1950s. Later, during the 1960s and 1970s, lichens dominated his natural history interests, culminating in 1988 with the publication of the pioneering work *Macrolichens of East Africa*, co-authored with Professor Hildur Krog. Throughout this period he never lost interest in ferns and once the book was in the hands of the publishers Dougal once again found time to pursue his ferny interests and participate in the activities of our Society.

photo: courtesy J. Swinscow

Annually from 1984 until at least 1989 he led a most successful meeting for Mary Potts' south-west regional group. As a follow up to one of these he and I arranged a day out on Dartmoor in 1986 to hunt for *Asplenium septentrionale.* To the astonishment of us both we were successful! That was a good day! In recent years he also contributed to the *Pteridologist.*

Many of the meetings led by Dougal during the 1980s ended with a tour of his garden near Exeter, accompanied by delicious teas provided by his wife, Josephine. The garden is small but very carefully laid out to inspire thought; it featured in a recent edition of the *Garden.* This interest in garden design and its significance led to the publication of his last book in 1992, *The Mystic Garden* by the Halsgrove Press. A book I have not yet read, the omission will be put right at the earliest opportunity. The ferns in Dougal's garden were of the highest quality, all were beautifully grown. I hope they continue to give pleasure to his family for many years to come.

Those of us fortunate enough to have had the pleasure of Dougal's company will never forget his wit, wisdom and enthusiasm - he will be sorely missed.
Dougal is survived by his wife Josephine, their three daughters and their grandchildren. To them we extend our deepest sympathy.

Martin Rickard

STOP PRESS . . . . . . CONGRATULATIONS!

We were very pleased to see in the Prime Minister's New Year Honours list that Jimmy Dyce, our President Emeritus and Grand Old Man of the Society, has been awarded an MBE (Member of the Order of the British Empire) for his services to the British Pteridological Society. Congratulations Jimmy!

MANTON CRATER

A crater on Venus has been named after Sidnie and Irene Manton, after nominations were invited by the US Geological Survey. The two sisters both studied at Girton College, Cambridge; Sidnie went on to become a distinguished zoologist, and as we all know, Irene revolutionised the study of pteridophyte evolution - and was a president of this Society. Both sisters were Fellows of the Royal Society. The crater is at latitude 9.3 degrees north and longitude 26.9 degrees west.

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JONES, Mr V., Hillways, Ingleby Greenhow, Middlesbrough, Cleveland TS9 6LL
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LAWSON, Mr R., 70 High Street, Rothesay, Isle of Bute PA20 9AR, Scotland
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MANTHORPE, Mr P.J., Devil's End, Church Lane, Haddiscoe, Norwich, Norfolk NR14 6PB
MAXTED, Dr N.W., School of Biological Sciences, University of Birmingham, Edgbaston, Birmingham B15 2TT
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NEWMAN, Mr S., 22 Stratford Road, Honeybourne, Evesham, Worcs. WR11 5PP
NUNN, Mr N.R., 47 St. Martins Street, Hereford, Worcs. HR2 7RD
O'SHEA, Mr B.J., 141 Fawnbrake Avenue, London SE24 0BG
ØLLGAARD, Mr B., Botanical Institute, 68 Nordlandsvej, Risskov, DK-8240, Denmark
PICKLES, Mr S., 20 Stubbin Road, Marsden, Huddersfield, West Yorks.
PIERCE, Miss S.J.A., 89 High Street, Measham, Swadlincote, Derbys. DE12 7HZ
PIEROZYNSKI, Dr W., 25 Mayflower Way, Farnham Common, Bucks. SL2 3TU
PROTTE, Mr A., Annastrasse 22, Wuerzburg 8700, Germany
SECCOMBE, Mr R.J.O., 23 Pine Close, Rudloe, Corsham, Wilts. SN13 0LB
SHARPE, Dr J.M., Box 4555 R.R.1, Dresden, Maine 04342, USA
STARK, Mr G., 4 School Terrace, Newtown, Reading, Berks. RG1 3LS
TAYLOR, Mr T., 12 Madin Street, New Tupton, Chesterfield, Derbys. S42 6EH
VOGEL, Mr J., Botany Department, Natural History Museum, Cromwell Road, London SW7 5BD
WHEATLEY, Dr T., Mote Croft, Church Lane, Horsted Keynes, West Sussex RH17 7AY
WHITE, Mr L., The Nook, New Road, Southwater, Horsham, West Sussex RH13 7AU
WILLIAMS, Miss M., c/o Dept. of Botany, University of Reading, Reading, Berks. RG2 7HB

THE AMERICAN FERN SOCIETY INC.

The AFS wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum,* the scientific quarterly *American Fern Journal.* Membership costs $11.00 and $20.00 per annum, respectively, including overseas postage ($14.00 and $31.00 if airmail postage required). For particulars please write to Dr Richard L. Hauke, 456 McGill Place, Atlanta, Georgia 30312 USA. Prospective members residing in Great Britain should write to Miss A.M. Paul, Dept. of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD.

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MEETINGS 1993

Meetings Secretary: A.C. Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P.J. Acock, N.J. Hards, J.M. Ide, A.C. Pigott, P.H. Ripley

Sat 6 March – **Spring Indoor Meeting – London**
Location: Natural History Museum, Cromwell Road, London
Leader: Mary Gibby Time: 11.00

Sat 29 May – **Day Indoor Meeting – Kew**
Location: Royal Botanic Gardens, Kew, Surrey
Leaders: Peter Edwards Time: 11.00

Thurs eve 8 - Sun 11 July – **Long Weekend Field Meeting – North Wales**
Leader: Rob Cooke
Centre: Royal Ship Hotel, Dolgellau, Gwynedd LL40 1AR
Time: 19.30 Thursday eve, 09.30 following mornings

Sat eve 24 - Sat 31 July – **Week Field Meeting – Galloway, Scotland**
Leader: Paul Ripley
Centre: See separate Meetings Programme sheet
Time: 19.30 Saturday eve, 09.30 following mornings

Sun 22 - Sat 28 August – **Week Field Meeting – Central France**
Leader: Michel Boudrie/Anthony Pigott

Thurs 19 - Sat 21 August – **Southport Flower Show: BPS Stand**
Further Info: Matt Busby

Fri 17 eve - Sun 19 Sept – **Weekend Field Meeting – Northumberland**
Leader: Matt Busby
Centre: Queen's Head Hotel, Bridge Street, Morpeth NE61 1TD
Time: 20.00 Friday eve, 09.30 following mornings

Sat 16 October – **Annual General Meeting & Autumn Indoor Meeting – Cambridge**
Location: Cambridge University Botanic Garden, Bateman Street
Leader: Margaret Nimmo-Smith Time: 11.00

For full details of these meetings, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

REGIONAL MEETINGS

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Wessex	J.E. Jarvis, Vermont Jubilee Road, Nailsworth, Stroud, Gloucs. GL6 0NG
Midlands	A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD
Leeds & District	J.H. Bouckley, 209 Woodfield Road, Harrogate, Yorks. HG1 4JE
South-East England	P.H. Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia	Mrs M.E. Nimmo-Smith, 201 Chesterton Road, Cambridge CB4 1AH

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19th, 20th, 21st AUGUST 1993

Schedules and further information from:
The Flower Show Secretary
44 Hoghton Street, Southport, Merseyside PR9 0PQ

The British Pteridological Society
BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 4 NUMBER 4

1993

Edited by A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY
Officers and Committee from October 1993

President: J.H. Bouckley
President Emeritus: J.W. Dyce, MBE

Vice-Presidents: J.A. Crabbe, Dr C.N. Page, M.H. Rickard, Mrs G. Tonge, J.R. Woodhams

Honorary General Secretary and Archivist: A.R. Busby, 'Croziers',
16 Kirby Corner Road, Canley, Coventry, CV4 8GD
(Tel: Coventry 715690)

Membership Secretary and *Editor of the Bulletin:* Miss A.M. Paul,
Department of Botany, The Natural History Museum,
Cromwell Road, London, SW7 5BD

Treasurer: Dr N.J. Hards,
184 Abingdon Road, Didcot, Oxon, OX11 9BP

Meetings Secretary: A.C. Pigott,
43 Molewood Road, Hertford, Herts., SG14 3AQ

Editors of the Fern Gazette: Dr B.A. Thomas, J.A. Crabbe & Dr M. Gibby
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Editor of the Pteridologist: J.W. Merryweather, Biology Department,
University of York, Heslington, York, YO1 5DD
assisted by J.W. Dyce & M.H. Rickard

Committee: R.G. Ackers, R. Cooke, Mrs D. Fortune, Miss J.M. Ide, S.J. Munyard, Mrs M.E. Nimmo-Smith, P.H. Ripley, N.R. Schroder, G. Stark, R.N. Timm

Fern Distribution Recorder: A.J. Worland, Harcam,
Mill Road, Barnham Broom, Norwich, Norfolk, NR9 4DE

Spore Exchange Organiser: Mrs M.E. Nimmo-Smith,
201 Chesterton Road, Cambridge, CB4 1AH

Plant Exchange Organisers: R.J. & Mrs B. Smith,
184 Solihull Road, Shirley, Solihull, Warwicks., B90 3LG

Booksales Organiser: S.J. Munyard, 234 Harold Road, Hastings, East Sussex, TN35 5NG

Trustees of Greenfield and Centenary Funds: J.H. Bouckley, A.R. Busby, Dr N.J. Hards

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £12.50, Personal Members not receiving the *Fern Gazette* £9.50; Student Members £7; Subscribing Institutions £20. Family membership in any category is an additional £2. Applications for membership should be sent to the Membership Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £5 extra to cover bank conversion charges). Airmail postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: *Asplenium* x *sarniense* Sleep, the Guernsey Spleenwort.)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE BULLETIN OF THE BRITISH PTERIDOLOGICAL SOCIETY

Vol. 4 1993 No. 4

SECRETARIAL NOTES

ANNUAL GENERAL MEETING 1994, PRELIMINARY NOTICE - The 91st AGM will take place on Saturday 15 October 1994 in the Department of Botany, The Natural History Museum, Cromwell Road, London at 2.15 p.m.

COMMITTEE VACANCIES - In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1994. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 10 September 1994.

SUBSCRIPTIONS 1994 - Members are reminded that subscriptions for 1994 are due on the 1st January 1994 and should be paid to the Membership Secretary, British Pteridological Society, c/o Dept. of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL - Our journals can be sent by airmail to overseas members, provided they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY - Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. There is one transferable ticket available for all RHS Shows other than the Chelsea Flower Show. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLES - The Society operates a reading circle for several journals. The *American Fern Journal* is a quarterly publication containing much information for those seriously interested in ferns; it is accompanied by the *Fiddlehead Forum,* which publishes many 'ferny' items of interest to the amateur grower. The Royal Horticultural Society's journal, *The Garden,* is published monthly. To receive any of these journals apply to the General Secretary.

THE GREENFIELD FUND - This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society's publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

THE CENTENARY FUND - This fund will be used to promote the study of all aspects of pteridophytes - horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to avail themselves of this fund should contact the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS - Back numbers of certain parts of the *Fern Gazette, Pteridologist* and BPS *Bulletin* are in short supply. However, those we have are very modestly priced and I am surprised that we do not sell more copies. My loft is beginning to creak under the weight of the magazines, so why not transfer a few to your house. A sample pack can be bought for £6, or obtain a price list from Patrick Acock, 13 Star Lane, St. Mary Cray, Kent, BR5 3LJ.

BINDERS for the BPS BULLETIN and PTERIDOLOGIST - Binders for volumes of the BPS *Bulletin* and *Pteridologist* are available from the General Secretary. The *Bulletin* binders are attractively produced with red hardboard covers and gold blocked lettering on the spine: only £5 each, including postage and packing. Binders for the *Pteridologist* have mustard hardboards and gold blocked lettering on the spine. Each binder holds one volume (six parts). £5 each including postage and packing. This applies to inland members only. Prices for overseas members on application. Cash with order, please make cheques payable to A.R. Busby.

BPS VIDEO "BRITISH FERNS"

With over fifty species of ferns the British Isles has a remarkably varied fern flora. Many species have distinctive distributions reflecting regional variations in environmental conditions. In particular the cool relatively damp environments of the North and the mild Western fringes of Britain bring together species typical of Atlantic, Arctic and Alpine regions, resulting in a fern flora that is unique to the British Isles.

This twenty-five minute video shows most of our native ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

The video has been funded by Schering Agriculture and the National Museum of Wales. It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

MEMBERS INFORMATION SERVICE - I am pleased to announce a new service to members. It is often the case that members require information and advice on many aspects of their interest in Pteridophytes but are often reluctant or simply do not know where to obtain it. Queries from members on any aspects of the biology, identification or cultivation of ferns or fern allies should be sent to the Hon. Gen. Sec. accompanied by three first class stamps.

ANNUAL GENERAL MEETING 1993

MINUTES of the 90th ANNUAL GENERAL MEETING held at the University of Cambridge Botanic Garden, Gilmour Building, Bateman Street, Cambridge on Saturday 16th October 1993 at 2.15 p.m.

IN THE CHAIR: The President, J.H. Bouckley.

PRESENT: R.G. Ackers, P.J. Acock, B.J. Applebee, E.J. Baker, D. Bannister, A. Beaufoy, H.E. Bellringer, A.R. Busby, J.M. Camus, R. Cooke, M.J., L.I. & T. Craddock, D. Fortune, M.T. & L. Hancock, N.J. & E. Hards, G.K. Hoare, J.E. Jarvis, P.A. Lynch, E.O. Mason, H.W. Matthews, J.W. Merryweather, S.J. Munyard, R.J. Murphy, M.E. Nimmo-Smith, A.M. Paul, Sir H. Peto, S.J. Pierce, A.C. Pigott, B. Porter, T. Pyner, M.H. & H. Rickard, P.H. Ripley, N.R. Schroder, G. Stark, B.R. Stevenson, I.N.J. Storey, R.W. & S. Sykes, B.A. Thomas, R.N. Timm, P. Twyman, L.A.M. Williams, G.H. Winder, C.M. Wyndham.

ITEM 1 – APOLOGIES FOR ABSENCE: R. Cole, J.M. Ide, C.N. Page, R.J. & B. Smith, J.R. Woodhams, B. Wright.

ITEM 2 – APPROVAL OF MINUTES: The Minutes of the 1992 Annual General Meeting held on 17th October 1992 and which were published in the 1992 Bulletin were approved.

ITEM 3 – MATTERS ARISING FROM THE MINUTES: There were none.

ITEM 4 – HONORARY GENERAL SECRETARY'S REPORT: Another year passes and we can look back on it with some satisfaction. I have managed to attend all the UK meetings this year but in spite of a great deal of hard work put in by the various leaders, numbers attending the meetings seem to have been fewer. The cost of accommodation is always a limiting factor and this needs to be borne in mind when meetings are being planned. However, one very positive side of the year's programme was another very successful excursion to the continent. Perhaps this is the way forward and we can plan to spend more time with the pteridophytes of mainland Europe, especially as we shall soon have a speedier way into the continent with the new rail tunnel soon to be in service. The meetings sub-committee is always pleased to consider ideas for meetings and venues and to receive offers to lead meetings.

HONOURABLE SERVICE: The most notable event of 1993 was the recognition of the long service to this Society by our Emeritus President, J.W. Dyce, who was named in the 1993 New Year Honours list and became a Member of the Order of the British Empire. We send Jimmy our warmest congratulations for an honour well deserved.

REGIONAL GROUPS: It is gratifying to see that the regional groups continue to function with great success and, as I commented last year, this is a very good way for new members to get to know our Society and its members. I am delighted to learn that a new group based around the Lake District has been established and will be known as the North-West Group and we wish them every success. We still have the Greater Manchester area, south-west England, Scotland and Wales without local groups and if anyone in those areas would like to consider forming a local group, they will receive every encouragement from the Committee.

MEMBERSHIP: At the time of writing my report, enrolment of new members appears to show a slight fall compared with the last two years. Eighty-one new members have joined during 1993 and this has to be set against the 1993 resignations which number 34. Total membership stands at about 750 with every likelihood of achieving a thousand members by the turn of the century.

PLANT AND SPORE EXCHANGE SCHEMES: This year has seen a change of organiser for the Plant Exchange; after several years of diligent work, Rosemary Hibbs was obliged to resign from this post due to family commitments. We owe her our warmest thanks for all her hard work in maintaining the success of this scheme. By now members will be aware that Ray and Brenda Smith have kindly taken over the task and we extend to them our gratitude for their help.

The Spore Exchange Scheme continues as one of the Society's great successes and it is undoubtedly due to Margaret Nimmo-Smith's dedication and hard work. We must not forget the invaluable help afforded by her husband, Ian, and we thank him for his interest and contribution. The Society has now purchased a refrigerator for storing the spore bank. This should improve the longevity of the spores during storage.

THE GREENFIELD AND CENTENARY FUNDS: Members are reminded that grants from these funds are available for private projects concerning the study and cultivation of ferns and fern allies. This year the Centenary Fund, set up in 1991, received its first application. Enquiries concerning these funds should be sent to me.

MEMBERS INFORMATION SERVICE: I am pleased to announce a new service to members. It is often the case that members require information and advice on many aspects of their interest in pteridophytes but are often reluctant or simply do not know where to obtain it. Queries from members on any aspects of the biology, identification or cultivation of ferns or fern allies should be sent to the Hon. Gen. Sec. accompanied by three first class stamps.

Finally, I rarely have the chance to end my annual report without the sad task of reporting the death of a long-standing member and this year is no different. It was with much regret that we learned of the death of Dr Anne Sleep. Anne had been dogged with poor health for many years and it prevented her from taking a more active role in the affairs of our Society. We mourn her passing and those of us who knew her will remember her with much affection.

ITEM 5 – HONORARY TREASURER'S REPORT: Nick Hards circulated a copy of the balance sheet and the following were noted:

a) Two grants had been made from the Greenfield Fund, one for the purchase of a refrigerator to store the spores for the Spore Exchange, the second towards the Sittee River Expedition which should be reported in one of the journals.
b) Interest from the Centenary Fund seems small because only a half-yearly amount is recorded in this financial year.

Neil Timm proposed acceptance of the accounts, seconded by Brian Applebee.

PROPOSED SUBSCRIPTION INCREASE: The Treasurer proposed deferring the subscription increase until 1995 as the Society balances were good for this year after two years' deficit. Robert Sykes asked why a subscription increase was necessary with a £3,000 excess of funds. The Treasurer replied that – (1) every few years the Society needed an extra £2,000 for the bulk purchase of envelopes, (2) there is a deficit on the Publications Account and money would be required in future for the new fern varieties leaflet, and (3) excess funds are needed to avoid cash flow problems. B.A. Thomas also reminded the meeting that an index for the Fern Gazette would be needed soon.

Dr Hards, seconded by R.W. Sykes, proposed the following increases in subscriptions to take effect from 1 January 1995: Full Personal Members from £12.50 to £15, Optional Members (not receiving the *Fern Gazette*) from £9.50 to £12, Student Members from

£7 to £9 and Subscribers from £20 to £25. Family membership supplement to remain at £2. The proposal was passed with one member against.

ITEM 6 - HONORARY MEETINGS SECRETARY'S REPORT: Anthony Pigott reported that 1993 was a successful year although attendances were down on the two previous very good years. He particularly drew attention to the French meeting which had been organised by BPS members in France. There are many members abroad and they should be considered. The 1994 programme would include a week meeting in Cornwall, mainly visiting gardens, a week in Ireland, a weekend field meeting in Yorkshire and a meeting in Scotland. Mr Pigott remarked that it is the BRITISH, not the English, Pteridological Society!

Mr Pigott ended his report by asking members for feedback on how meetings could be improved, particularly for the newer members. Dr Hards commented that as the meetings reports are published in the Bulletin for future reference, it is important that as wide as possible geographical area should be covered.
The President thanked Mr Pigott for his hard work.

ITEM 7 - REPORTS OF THE EDITORS: *Bulletin* - Alison Paul expressed her regret that the 1992 *Bulletin* was published very late, due mainly to reasons beyond her control. There are still some reports outstanding for this year but Miss Paul hopes to have the 1993 *Bulletin* out earlier. She requested that any members who have photographs of Society meetings send them to her for consideration for publishing in the journal.

Pteridologist - Martin Rickard reported that he had not received any criticism of the 1993 number and hoped that it indicated that members are generally satisfied with the journal's contents. As usual, copy for the 1994 number was slow to come in but he hopes to have sufficient copy before next spring. Robert Sykes praised the production of the *Pteridologist* saying what excellent reading it was for people unable to attend meetings.

Fern Gazette - Dr Barry Thomas reported that the next edition of the *Gazette* should be ready by mid-November.

ITEM 8 - ELECTION OF OFFICERS AND COMMITTEE:
Vice-President: It was proposed by M.H. Rickard, seconded by J.M. Camus, that J.R. Woodhams be elected as a Vice-President of the Society. In proposing Mr Woodhams, Mr Rickard reminded the meeting of the long service Mr Woodhams had given the Society. He has served several times on the Committee and, ably assisted by his wife Joan, has always ensured that our meetings at the Royal Botanic Gardens, Kew, have been most enjoyable. In his letter of acceptance Mr Woodhams expressed a feeling of honour at being asked to become a Vice-President and looked forward to serving the Society in that capacity. John ended his letter with an acknowledgement of his wife Joan and how her assistance has always been important to him.

Election of Officers: It was reported by Mr Busby that Dr Hards, Mr Pigott and he were willing to stand as Hon. Treasurer, Meetings Secretary and General Secretary respectively. It was proposed by M.H. Rickard, seconded by J.M. Camus, that the three Officers be elected for a further year. This was carried unanimously.

Committee: The two longest serving Committee members due to retire were J.M. Camus and J.R. Woodhams. The two nominees to fill the vacancies were J.M. Ide, proposed by A.R. Busby, seconded by J.M. Camus, and P.H. Ripley, proposed by A.R. Busby, seconded by A.C. Pigott. They were elected unanimously.

Election of Honorary Editors: *Fern Gazette* - Mr Busby reported that Dr B.A. Thomas, J.A. Crabbe and Dr M. Gibby had indicated their willingness to serve for another year. *Bulletin* - A.M. Paul had also indicated her willingness to serve for another year. All the above were elected unanimously.
Pteridologist - M.H. Rickard had expressed his wish to stand down as Editor of the *Pteridologist* after nine years. The President reflected the mood of the meeting when he thanked Mr Rickard for setting and maintaining the high standard that this Society enjoys.
The President was pleased to inform the meeting that he was able to propose James Merryweather as the new Editor of the *Pteridologist.* Mr Rickard supported the President's proposal by drawing the meeting's attention to the fact that Mr Merryweather, a botanist by profession, has experience as an author and possesses editorial skills. Mr Merryweather was elected unanimously.

ITEM 9 - ELECTION OF AUDITORS: Mr Busby reported that both Mr G. Hoare and Mr R.J. Smith had indicated their willingness to serve for another year. They were duly elected.

ITEM 10 - ANY OTHER BUSINESS:

a) Holttum Memorial Pteridophyte Symposium at Kew, 1995. Miss J.M. Camus drew members' attention to this symposium, explaining that it was in memory of Prof. Eric Holttum, one of this century's leading pteridologists.

b) Dr Hards, Hon. Treasurer, said that the hire of the Gilmour Building for the AGM had been expensive but the cost had been more than offset by the Bring and Buy Sale of ferns at this meeting. He thanked everyone who had brought and bought ferns.

Before closing the meeting the President thanked Margaret Nimmo-Smith and members of the East Anglian Group for organising the fern sale and AGM. He also thanked P.J. Acock, R.J. and B. Smith, S.J. Munyard and the regional organisers for their work on behalf of the Society.

The meeting closed at 3.05 p.m.

A.R. Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1992

ORDINARY ACCOUNT

(1991)	INCOME:	
8835.63	SUBSCRIPTIONS	£11218.30
872.40	INTEREST	409.92
400.00	BOOKSALES	200.00
4.50	SPORE EXCHANGE	-
1279.61	MERCHANDISE	497.95
768.03	CHELSEA FLOWER SHOW	-
7.00	SUNDRIES	82.23
12167.17	**TOTAL INCOME**	£12408.40

	EXPENDITURE:	
1708.00	METLOC – PTERIDOLOGIST	1788.00
3675.60	METLOC – GAZETTE	2759.00
2452.00	METLOC – BULLETIN	1719.00
698.30	PRINTING AND STATIONERY	177.00
2648.06	ADMINISTRATION AND POSTAGE	2270.87
26.10	SUBSCRIPTIONS TO SOCIETIES	178.25
167.37	BANK CHARGES	130.04
60.00	PLANT AND SPORE EXCHANGES	157.00
46.50	MEETINGS	271.87
1993.95	MERCHANDISE	666.42
1000.00	BOOKSALES ADVANCE	-
-	STANSFIELD MEDALS	179.18
-	COMPUTER	1000.00
-	KEW GUILD	60.00
14475.88	**TOTAL EXPENSES**	£11356.63

BALANCE FOR 1992	1051.77
BROUGHT FORWARD FROM 1991	3658.27
CARRIED FORWARD AT 31.12.1992	£4710.04

CENTENARY FUND

BALANCE BROUGHT FORWARD	£5063.97
INTEREST RECEIVED	166.22
CARRIED FORWARD AT 31.12.1992	£5230.19

GREENFIELD FUND

BALANCE BROUGHT FORWARD	£1737.45
INTEREST RECEIVED	105.48
GRANTS: SPORE EXCHANGE	(137.98)
SITTEE RIVER EXPEDITION	(50.00)
CARRIED FORWARD AT 31.12.1992	£1654.95

PUBLICATIONS ACCOUNT

BALANCE BROUGHT FORWARD	(£1445.95)
RECEIPTS – Offprints	49.50
– Special Publication No. 1	89.60
– Special Publication No. 2	40.75
– Special Publication No. 3	198.50
– Special Publication No. 4	113.90
– Special Publication No. 5	63.50
CARRIED FORWARD (DEFICIT) AT 31.12.1992	(£890.20)

Notes to Accounts

1. The Society had the following stocks of books at 31 December 1992 (1991 stocks in brackets): *Guide to Hardy Ferns* 60 (91), *Fern Names and their Meanings* 30 (50), *Cultivation and Propagation of Ferns* 10 (100), *History of British Pteridology* 879 (913), *BPS Extracts & Papers* 459 (469).

2. Interest arises on 5th April on the Centenary and Greenfield Funds. No provision has been made for accrued interest.

3. For the convenience of the officers concerned and the Treasurer, certain officers are issued with advances of expenses. The balances outstanding at 31 Dec. were small and have not been adjusted in the accounts.

4. The accounts reflect the subscriptions actually received in the year. Approximately £1500 is subscriptions received in advance for 1993 but some subscriptions remain outstanding for 1992.

5. The Society's assets include a share in a computer and software at the Natural History Museum cost £1000.

6. BPS Booksales had assets of £3277.95 at 31 Dec. 1992.

LECTURE MEETINGS AND DAY VISITS 1993

SPRING INDOOR MEETING, LONDON – 6 March. The meeting was held in the Department of Botany at The Natural History Museum. It gave scientists working at the Museum the chance to present their current research projects but also aimed to show the enthusiastic pteridologist various ways to collaborate with the Museum or use its facilities for their own research interests. While the afternoon was reserved for talks, the morning was spent in the Herbarium. Alison Paul, responsible for the curation of the Pteridophyte Herbarium gave a fascinating introduction to curatorial work and curatorial research. The Museum not only has with more than 176,000 herbarium sheets one of the biggest pteridophyte collections in the world, it also has a spirit collection of pickled rhizomes and other ferny bits. In the British collection the ferns are arranged in order of genera and species and then in vice-county order. This immediately enabled some participants to check on rare ferns reported or collected from their area. At least one member was about to set off and refind *Asplenium ceterach* on old church walls. I hope he found it still growing there after 105 years and will send in some fronds to be added to the collection. A view through microscopes showed the difference between good and abortive spores (a valid character to distinguish between good species and plants of hybrid origin) and, at higher magnification, nicely pinkish stained fern chromosomes (courtesy of Mary Gibby). We would like to know if any interesting fieldwork or results came out of the short herbarium search that Saturday morning.

photo: J.N. Downs, NHM photo unit

The Natural History Museum (BM) Pteridophyte Herbarium with Curator, Alison Paul

After lunch, Mary Gibby gave an overview of fern research in the Botany Department to the audience of nearly 50 people. As a result of the Museum's reorganisation in the late 1980s the 'Fern Section' ceased to exist as such, but active pteridological research is now being carried out within the Curation, Tropical, and Cell and Molecular Biology Divisions.

Josephine Camus studies ferns of SE Asia. She had just returned from a long field trip in Malesia. The archipelago is very rich in species due to its diverse geological and climatic history with numbers of up to 2,000 fern species on some larger islands. Her well illustrated talk introduced ferns with fronds of up to several metres and the problems of achieving good herbarium specimens. The richness of the vegetation was stunning. Folk-use of fruits of plants from the Cucurbitaceae (cucumber family) to support, cover and display manliness or of stained fern vascular bundles as bracelets attracted much attention.

Dennis Adams is an Honorary Associate at the NHM and is currently working on the Flora Mesoamericana Project. He gave an autobiographical and historical account of his life with ferns. He started his career and fern work in 1949 in the Gold Coast of West Africa (now Ghana) as a lecturer in botany at the University College. He collected on the island of Fernando Po (Bioko) and on the mainland and carried out ecological studies on *Ophioglossum*. In 1959 he moved to Jamaica and collaborated there with G.R. Proctor and later in Trinidad with Yasmin Comeau. Following all this experience in tropical regions he has been working since 1980 at the Museum on the genera *Asplenium* (85 species) and *Diplazium* (53 species) in the area covered by the Flora Mesoamericana Project, from southern Mexico to Panama. These are only glimpses of his most interesting talk, which we hope will be published in full later.

After tea and cakes, Mary Gibby introduced the audience to current research on fern chromosomes and DNA in the Cell and Molecular Biology Division. The cytology of a diploid and tetraploid species in the genus *Arachniodes* had been investigated, the sporophytes hardly distinguishable by their morphology. In collaboration with Elizabeth Sheffield's team at Manchester University, genetic diversity of the filmy fern *Trichomanes speciosum* is under investigation by Junxia Ji. Molecular biological techniques like DNA amplification via PCR or RFLP, SSCP, RAPD (lots of buzz words!) can be employed to reveal reproductive behaviour or origin of species in *Trichomanes* and *Asplenium*.

Peter Stafford recently published an account of spore morphology in the genus *Selaginella* in the NW European Pollen Flora. Scanning electron microscope photographs of micro- and mega-spores of these and ferns like *Marsilea, Pilularia* and *Azolla* at up to x10,000 magnification caught the eye of the audience. The characters observed are very valuable for species distinction. Unfortunately the technique is not appropriate for the fern amateur.

We have to thank Alison Paul and Mary Gibby for this well organised day and the Department of Botany for providing the excellent facilities. It was an enjoyable demonstration that pteridological research is one of the strongholds of NHM research activities.

Johannes Vogel

KEW GARDENS - 29 May. More than 40 members gathered in the Lower Nursery mess room to be welcomed by Peter Edwards and briefed at the start of a tour of the ferns. We started in House 38 where a *Lindsaea*, growing in a filmy fern case, and a *Lecanopteris sarcopus*, without attendant ants, were given pride of place but where everything was interesting. Tubs of New Zealand tree-ferns confiscated by Customs were responding to care and attention with new fronds. Platyceriums growing on what looked like milk crates, ferns which previously were only names in Jones' *Encyclopaedia of Ferns*, a collection of doodias abandoned at the end of a research project and for me the fern of the day - *Pronephrium rubicundum*. Taking care not to disturb the blackbirds at the door of No. 38, it was off to the Alpine Nursery and into the alpine house. The African *Dryopteris dracomontana* under the bench, *Bommeria hispida*, some *Cheilanthes*, and all the time wondering why they are doing so well when for us lesser mortals they are so, so difficult.

Back to the Lower Nursery for a quick cup of tea before Peter Edwards' light-hearted lecture on the perils of exploring the South American jungle. Away again at a canter to the Filmy Fern House with its new high pressure humidifying system which is doing wonders for the inhabitants.

On to the Princess of Wales Conservatory to be overwhelmed once more. An impromptu talk by Peter Bradley on how to shorten a tree-fern: just wrap with a band of moss, leave a while and then saw it off and stick the top back in the ground. Epiphytes grow better on freshly dead or living trees than on long dead ones; one of the living trees was a large cork oak branch, blown down in a storm, which had taken root - the world's largest cutting perhaps? The climber on the roof truss was a huge *Lygodium*. A group crouched over an *Adiantopsis radiata* oblivious of the *Adiantum peruvianum* beside it.

Time had run out, back to the Lower Nursery and quick farewells, a last look in House 38, seeking inspiration for a new line in houseplants before the doors were locked.

The first drops of rain fell as I went through the gates.

Jim Jarvis

AUTUMN INDOOR MEETING, CAMBRIDGE UNIVERSITY BOTANIC GARDEN - 16 October. Over 50 people attended the meeting, which started with a tour of the gardens led by Norman Villis. Tender ferns are to be found in the glasshouses, particularly the main corridor, the conservatory and recently rebuilt tropical house. Outdoors an enormous *Osmunda regalis* grows in the bog garden with *Onoclea sensibilis*. The woodland area contains large plantings of *Matteuccia struthiopteris* and *Polystichum* and *Dryopteris* varieties. Polypodiums are to be found on the rock garden, the chalk mound and the special bed showing polyploidy.

Members reassembled for the fern sale, which was a new but very successful venture. Proceeds went to the Society and more than covered the cost of the meeting. Many thanks to everyone who brought or bought.

The AGM was held after lunch. The rest of the afternoon was devoted to short talks on fern conservation for the gardener. Martin Rickard began, by talking on the subject of the NCCPG (National Council for the Conservation of Plants and Gardens) National Collections of ferns. He distributed a list of these Collections and explained that there were many gaps to be filled, particularly small genera and groups of ferns which could be easily grown. Collections were also concentrated more in the south and he hoped that northern members might remedy this. He continued by showing slides of plants from his National Collection of *Polypodium* cultivars.

Matt Busby continued the National Collections theme by talking about his National Collection of *Osmunda* which he started in 1968. He demonstrated the importance of record keeping and showed that it need not be as daunting as it appears at first. His collection is kept in large pots standing in water. Plants are divided every few years, and are also raised from spores. Matt concluded his talk with slides of the osmundas.

Margaret Nimmo-Smith then described something of her task as Spore Exchange Organiser. She felt that the Spore Exchange was a great potential conservation resource for the BPS, but often members were inevitably conservative in their requests. She encouraged members to experiment with unknown and untried species. The recent survey of members' fern interests had brought some interesting results but she hoped more members would return their forms.

The relatively newly formed East Anglian Group should be thanked for organising the most successful plant sale, and special thanks go to non-member Sylvia Norton for keeping everyone refreshed with tea, coffee and cakes.

Margaret Nimmo-Smith & Barrie Stevenson

SUBSCRIPTION INCREASE

Please note that the following subscription increase, agreed at the AGM on 16th October 1993, will take effect from 1st January 1995.

Full Personal Members £12.50 to £15
Optional Members (not receiving the *Fern Gazette*) £9.50 to £12
Student Members £7 to £9
Subscribers £20 to £25
Family Membership in any category remains £2

Standing Order forms will be sent out with the 1994 *Pteridologist*.

THE HOLTTUM MEMORIAL PTERIDOPHYTE SYMPOSIUM
17-21 July 1985. The Royal Botanic Gardens, Kew, Surrey, UK

Professor Eric Holttum was pre-eminent among the pteridologists of the 20th century. This meeting has been organised to celebrate his outstanding contribution to the study of ferns and fern allies, and encompasses the celebration of the 100th anniversary of his birth.

Keynote speakers will introduce the themes, and other speakers in each session will be selected to fit into these broad contexts. Poster presentations, workshops and a number of social events will also be held. There will be a week-long post-symposium excursion to SW England.

The expected mailing date for the second and final circular is mid-March 1994. All respondents to the first circular will automatically receive this. Others who wish to be put on the mailing list should contact Robert Johns, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE, UK, without delay.

NATIONAL FIELD MEETINGS 1993

DOLGELLAU, NORTH WALES – 9-11 July

A.R. Busby

On the morning of Friday 9 July, eighteen members and guests, including Balu Pernmal, a visiting ecology student from Malaysia, gathered outside the Royal Ship Hotel to be greeted and briefed by our leader for the weekend, Rob Cooke.

Parking the cars at Morfa Mawddach Station, we walked across the pedestrian toll railway bridge to Barmouth and noted *Athyrium filix-femina, Polypodium* sp., *Asplenium trichomanes, A. scolopendrium, Dryopteris filix-mas* and *D. dilatata*. Crossing the road and climbing a long flight of steps we arrived at an old quarry at 23/617157, where we found *D. dilatata, D. filix-mas, D. affinis, Athyrium filix-femina, Asplenium adiantum-nigrum, Polypodium vulgare* and *Pteridium aquilinum*. Most notably we saw several plants of the Barmouth fern, *Asplenium obovatum* subsp. *lanceolatum* (*A. billotii*) growing from the fissures of the quarry face. Further explorations yielded more of the same. Returning via a different route, Rob took us past the site of *Ophioglossum vulgatum*. He had seen it two months previously, however, despite diligent searching, we failed to find a single plant. We climbed down again to Barmouth via steep steps between the houses amidst ferny walls.

After lunch we walked along the disused railway track to the A493 and the Arthog Valley at 23/648114 where a series of waterfalls rush down a wooded valley. We climbed steadily noting *Blechnum spicant, Athyrium filix-femina, Dryopteris filix-mas, D. dilatata, D. affinis, Phegopteris connectilis, Asplenium trichomanes, Polypodium vulgare* and the ever-present *Pteridium aquilinum*. Higher up the valley we found *Hymenophyllum wilsonii* clothing the boulders along the stream and *Oreopteris limbosperma*. According to notes I made on my last visit in September 1975 we should have found *Dryopteris aemula* and *Polystichum setiferum* but largely due to the fact that little exploring was done, this time they were not seen. We returned to our hotel foot-sore and weary after tramping some eight miles and passed the evening in an excellent local restaurant discussing the day's events amongst other things.

We woke to rain on Saturday and made our way to the aptly named Torrent Walk at 23/761181. Here we enjoyed the sight and sounds of another series of waterfalls but on a larger scale than those at Arthog. Close to the road the valley side was covered in *Asplenium scolopendrium*, yet the valley was predominantly acid. Again we found *Dryopteris filix-mas, D. dilatata, D. affinis, Athyrium filix-femina, Polypodium vulgare, Phegopteris connectilis, Oreopteris limbosperma, Gymnocarpium dryopteris, Hymenophyllum wilsonii* and *Pteridium aquilinum*. We noted the strange companionship of *Blechnum spicant* and *Polystichum aculeatum* but the real surprise awaited us on a roadside wall at the bottom of the valley. Martin Rickard discovered several dozen plants of *Asplenium trichomanes* all showing distinct variations from dainty cristulatums through cristatums to partially ramose forms. At least one of these was found to be nothosubsp. *lusaticum,* the hybrid between subsp. *trichomanes* and subsp. *quadrivalens.*

After lunch we moved on to Cader Idris at 23/698153 for a hill walk to Llyn y Gadir accompanied by showers. On a grassy slope *Selaginella selaginoides* was reported and after a forty-five minute walk, we found *Diphasiastrum alpinum, Huperzia selago* and *Lycopodium clavatum* in abundance growing in close proximity on an exposed windswept shoulder covered with *Vaccinium* and *Calluna*. Ankle-twisting scree and boulders were crossed en route to the lake where we found many small plants of *Cryptogramma crispa* and *Cystopteris fragilis*. Along the way *Athyrium filix-femina, Blechnum spicant, Dryopteris* *filix-mas, D. dilatata* and *D. affinis* had been commonly encountered.

Following a short rest, during which we watched the dark clouds dragging their curtains of rain across the mountains, we began our return to the cars along a different route, stopping at the far side of the lake to find *Isoetes lacustris. Equisetum fluviatile* was also noted in an adjacent lake.

Saturday had seen the departure of several members obliged to return home before the end of the weekend, including our leader Rob Cooke. I was pleased to be asked to lead on Sunday morning and decided to visit Llanylltyd at 23/733217. The Society had visited the area during 1961 and had located *Asplenium* x *alternifolium* on open scree beside the A470. A return visit in 1975 failed to re-locate the hybrid and the Society had been accused of removing it, an allegation strongly refuted by J.W. Dyce. It occurred to me that we might spend some time looking for it. However, as we arrived near the site it was obvious that the scree was now heavily clothed in bracken so I decided that our party, which now numbered six, should concentrate on the adjacent roadside woodland which contained some scree areas and both parents: *A. septentrionale* and *A. trichomanes.*

We quickly recorded *A. trichomanes* together with *Athyrium filix-femina, Blechnum spicant, Dryopteris filix-mas, D. dilatata, D. oreades* and *D. affinis.* On a small bridge carrying the road over a small stream I found an abundance of *Asplenium scolopendrium* which was absent from the wood. The final find of the day was *A. septentrionale* in boulder fissures high above the wooded scree. With this final success we said our goodbyes.

Our warmest thanks go to Rob Cooke for organising such an interesting weekend in the Principality.

GALLOWAY, SCOTLAND - 24-31 July

A.R. Busby *et al.*

After a briefing the night before, nine members and guests assembled outside the Douglas Arms Hotel, Castle Douglas, to be greeted by our leader, Paul Ripley, and we set off for our first exploration of the week. Paul led us to the picturesque Loch Stroan at 25/647701. Here we found *Pteridium aquilinum, Athyrium filix-femina* and *Dryopteris dilatata.* On a nearby disused railway bridge we found *Asplenium trichomanes* and *A. ruta-muraria.* A quick paddle in the loch revealed *Isoetes lacustris.*

We then moved on to the Bennan area at 25/65-72- to stroll through the pine plantations that are such a feature in Scotland to find *Dryopteris filix-mas, D. dilatata, D. affinis, D. carthusiana, Oreopteris limbosperma, Blechnum spicant, Athyrium filix-femina* and *Pteridium aquilinum.* Alongside the path Paul showed us a remarkable find discovered by him a few weeks earlier while reconnoitring for this meeting. It was a large plant of *D. filix-mas* which had developed as a fine 'Polydactyla'. It was generally agreed that it should be known as *D. filix-mas* (Polydactyla Group) 'Bennan'. Unfortunately, it was a little too early for spores to be collected.

Our last search before taking lunch at New Galloway, was amongst the pine trees where Lowren Burn runs down into Loch Ken at 25/645742. In addition to the foregoing we found *Gymnocarpium dryopteris* and *Phegopteris connectilis.* One plant of *D. dilatata* was a convincing 'Depauperata' but perhaps not really garden-worthy.

photo: A.R. Busby

Bracken at Bennan, Galloway

John Garstang, Paul Ripley & 'Polly', Jennifer Ide, Margaret Nimmo-Smith, Andrew Leonard,
Marjorie Garstang, Gillian Ripley, Pamela Belsham

After lunch, we visited the ruins of Kenmore Castle (25/635765). Under a stone stile, we found *Cystopteris fragilis* and within the castle grounds we added to the morning's list *Polystichum aculeatum, P. setiferum* growing on the castle mound and *Polypodium vulgare* growing on the branches of the trees. We returned to Castle Douglas to visit the National Trust for Scotland's Threave Garden. Although a number of hardy ferns had been planted in a woodland setting, little thought had been given to planting them to full advantage and there were many glaring examples of wrong labelling. One attractive feature was a small brick wall in the walled garden completely smothered with *Asplenium trichomanes* with *A. scolopendrium* and *Athyrium filix-femina* staking their own claim to the wall. The greenhouses contained a vivid display of conservatory plants with many tender ferns including representatives of *Pellaea, Asplenium, Dicksonia* and *Pteris.*

Monday morning found us making our way to the Rhinns of Kells (25/51-83-), a mountainous area to the north-west of Castle Douglas. Leaving the cars amongst the pine trees, we made our way across wet moorland of *Calluna* and *Vaccinium* with large areas of *Sphagnum,* made all the wetter by blustery showers. Here we noted *Huperzia selago, Blechnum spicant, Athyrium filix-femina* and *Cryptogramma crispa.*

Lunch was taken at the foot of the mountain but before we began the climb, Paul discussed with the party the idea of some going on to the next site as he had arranged to meet someone at Craignaw and time would not allow us to explore both sites. So it was decided to split the group leaving five of us to explore the mountain. A steady climb made in frequent blustery showers provided us with *Polypodium vulgare, Oreopteris limbosperma, Dryopteris dilatata* and *Asplenium trichomanes.* Further on in another gully we found some magnificent patches of *Phegopteris connectilis.*

That evening, in the comfort of the hotel restaurant, we learned that the other group had added *Asplenium trichomanes-ramosum (A. viride)* to the day's bag.

On Tuesday morning, we drove to a farm and parked our cars by a ruined tower which had *A. ruta-muraria* and *Athyrium filix-femina* in the walls. After about a mile walking across fields we made our way down to the beach and searched for *Asplenium marinum.* We soon made several finds in the rock crevices. Higher above the beach we found *Dryopteris affinis* and *Pteridium aquilinum* but failed to find the *Ophioglossum vulgatum* which is recorded there, probably because it was too late. However, in and near a ditch an extensive colony of *Equisetum telmateia* was found and also *E. arvense, E. fluviatile, E. palustre* and the hybrid *E.* x *litorale.*

A tortuous drive along back roads took us to Port Logan where we ate lunch outside the public house, leaning against a wall of *Polypodium interjectum. Asplenium scolopendrium* was on the house wall and *Athyrium filix-femina, Dryopteris affinis* and *Equisetum arvense* grew by the sea wall.

In the afternoon we visited Logan Botanic Garden, an outpost of the Royal Botanic Garden, Edinburgh. Here the mild climate enables many otherwise tender plants from Australasia to flourish. The garden, mainly within sheltered walls, is ideal for growing ferns. *Dicksonia antarctica* does well and has achieved a height of 20 feet. *Blechnum chilense* is used extensively as ground cover.

In the woodland area was a planting of *Woodwardia unigemmata* showing the pink growth of the new fronds amongst young tree-ferns. At present there are few other ferns but we noted *Notholaena marantae* and *Cosentinia vellea* growing on a retaining wall, *Dryopteris maderensis,* a *Hypolepis* species and *Woodwardia radicans* given protection by some shrubs, and some as yet unnamed ferns collected by Dr Chris Page. The stems of the tree-ferns also provided a home for several self-sown ferns, mainly *Athyrium filix-femina* and *Dryopteris dilatata. Pyrrosia rupestris* and *Phymatodes diversifolia* are planted to grow up the tree-ferns.

Afterwards we visited the site of a bridge outside the gardens on the edge of the estate. Here we saw plentiful *Asplenium scolopendrium, A. trichomanes, A. ruta-muraria* and *Cystopteris fragilis.* Underneath the bridge we found *Dryopteris filix-mas, D. affinis, D. dilatata* and *Athyrium filix-femina.*

On the way home we made a detour to visit Gatehouse of Fleet's disused railway platform which is under a foot of water in places but also provides a home for adders. The *Asplenium trichomanes* in the platform wall is still plentiful but the site is likely to be spoilt by the vigorous growth of willow saplings. One plant of *Dryopteris oreades* was present and also found were *D. filix-mas, D. affinis* and *Athyrium filix-femina.*

Wednesday morning heralded a return to the high country, however, mercifully we were able to motor up to Glen Trool summit. I do not think any of us were quite prepared for the conditions that welcomed us. The summit was well above the cloud base and we stepped out of the cars into gale-driven rain that stung the face and took our breath away. Paul advised that we should not stray too far from the track and try to keep within sight of each other. We quickly found *Dryopteris dilatata, Blechnum spicant, Cryptogramma crispa, Diphasiastrum alpinum, Lycopodium clavatum* and a large carpet of fruiting *Huperzia selago.* Three-quarters of an hour was more than enough in those conditions and we were pleased to return to the comfort of our cars. Lunch was taken near Glen Trool village in bright sunshine and *Dryopteris carthusiana* was found in a nearby roadside ditch.

After lunch, we moved on to walk the south side of Loch Trool, 25/4--7--, where we found *Pteridium aquilinum, Athyrium filix-femina, Blechnum spicant, Dryopteris filix-mas, D. affinis, D. dilatata, Oreopteris limbosperma* and *Phegopteris connectilis.* Further on, on boulders shaded by pine trees, we found *Hymenophyllum wilsonii.* Interestingly we also found it growing on the bark of trees, a habitat where it is not often seen. A brief walk on the north side of the Loch yielded much the same ferns, with the addition of *Polypodium vulgare* and *Asplenium trichomanes.*

On our way back to Castle Douglas, we stopped at an impressive waterfall and recorded *Athyrium filix-femina, Polypodium vulgare, Phegopteris connectilis, Dryopteris affinis* and *Blechnum spicant.*

On Thursday we were joined by the vice-county recorder for Kirkcudbright, Olga Stewart, and her companion Anna Whyte. Olga met us at Kirkonnel Flow (25/96-70-), an extensive wood containing *Athyrium filix-femina, Dryopteris filix-mas, D. dilatata, D. carthusiana* and *Pteridium aquilinum.* The hybrid between *D. dilatata* and *D. carthusiana* (*D.* x *deweveri)* is recorded from here and we spent much time looking for it. We eventually found one or two plants that were quite convincing.

For lunch we picknicked at Kippford overlooking a large inlet of the Solway Firth and moved on to Wildcliffe Nature Reserve at Sandyhills (25/913560). This proved to be a very interesting site. We quickly recorded *Asplenium scolopendrium, Polystichum setiferum, Dryopteris filix-mas, D. dilatata, D. affinis, Blechnum spicant, Athyrium filix-femina* and *Pteridium aquilinum.* After negotiating a thicket of quickthorn and bramble, we found *Asplenium trichomanes* growing on the cliff and several *A. scolopendrium* sporting various forms of bifurcate and partially marginate fronds. *Polypodium interjectum* and *P. cambricum* were also present. Our next call was on the flat coastal farmland at Preston Merse, a long trek to a shrubby wood to see *Thelypteris palustris,* noting *Equisetum fluviatile, Dryopteris dilatata, D. filix-mas* and *D. affinis* on the way.

By mid-afternoon, just as our enthusiasm was beginning to flag, Olga suggested that we follow her home to share a pot of tea. At this suggestion, spirits visibly soared and we agreeably finished the day in the comfort of her home near New Abbey with its views of nearby Sweetheart Abbey. As the party made its way back to Castle Douglas, two of our group visited Shambellie House (25/962665) to see an exhibition of Victorian and Edwardian fashions and noted a red-stiped *Athyrium filix-femina.*

Friday morning found us on the coast of Wigtown Bay at a place called Kirkdale Mains (25/51-53-). It was our intention to follow the Kirkdale Burn down to the sea. Adjacent to where we parked the cars, Olga Stewart drew our attention to a cluster of *Polystichum* plants where *P.* x *bicknellii* had been found previously. Careful scrutiny of the plants revealed a possible candidate and a frond was removed for further study. The wooded burn proved to be quite ferny with *Pteridium aquilinum, Athyrium filix-femina, Dryopteris filix-mas, D. dilatata, D. affinis, Polystichum setiferum, P. aculeatum, Blechnum spicant, Polypodium vulgare, Oreopteris limbosperma, Phegopteris connectilis* and *Asplenium* *trichomanes*. On rocks near the sea we found *A. marinum*. Following lunch at Gatehouse of Fleet we moved on to Castramont Wood, a large deciduous wood on a hillside. An hour spent here provided us with *Pteridium aquilinum, Dryopteris affinis, D. filix-mas, D. dilatata, D. carthusiana, Phegopteris connectilis, Oreopteris limbosperma, Blechnum spicant, Polypodium vulgare* and the delightful *Equisetum sylvaticum*.

Olga suggested that we move further along the lane to search along Castramont Burn with the promise of finding the hay-scented fern, *Dryopteris aemula*. We splashed and scratched our way along the burn, occasionally having to climb up around obstacles, noting on the way all that we had seen in Castramont Wood and adding *Asplenium trichomanes*. Suddenly, with a whoop of delight, Paul spotted the elusive *D. aemula*, and we all scrambled to feast our eyes and turn our cameras on our quarry. For many of us this was one of the high points of the week and we returned to our cars realising tht we had now seen just about all of the pteridophyte flora of this south-western corner of Scotland.

Our final visit of the day was to the nearby Killiegowan Wood at 25/58-57-. Again we found *Pteridium aquilinum, Dryopteris filix-mas, D. dilatata, D. affinis, Blechnum spicant, Athyrium filix-femina, Oreopteris limbosperma, Asplenium scolopendrium* and *A. adiantum-nigrum*.

On Saturday, the last day of July and the last day of our meeting, Paul led the group to Hannaston Wood (25/59-82-), near Glenlee. In the low-lying areas of this attractive wood, *Pteridium aquilinum, Dryopteris filix-mas, D. dilatata, D. affinis, D. carthusiana, Athyrium filix-femina, Oreopteris limbosperma* and *Blechnum spicant* were frequent. On the slopes to the north of a burn *Equisetum sylvaticum* was found near the water and *Phegopteris connectilis* was abundant on the steeper banks. A dry outfall from a man-made lake provided an ideal site for *Gymnocarpium dryopteris*, which in places was spreading away from the ditch to form feathery carpets.

In the afternoon, after lunch at Auchencairn, we were again joined by Olga and Anna together with Mr McCullock, a naturalist employed by the Scottish Wildlife Trust and Scottish Natural Heritage and an expert on butterflies and other insects, for a visit to New Law Bog at 25/733480. This fascinating site comprises a central floating bog and carr with surrounding wet grassland. In the surrounding area, *Blechnum spicant, Athyrium filix-femina, Dryopteris dilatata* and *D. carthusiana* were quite common. In the central area, *D. affinis* and *D. filix-mas* were also present. *Polypodium vulgare* was growing on the branches of shrubby trees, and amongst the wet grass was a large area of *Thelypteris palustris*. Apart from re-finding *Dryopteris aemula*, the look on Peter Hainsworth's face when he saw the two magnificent *Osmunda regalis* plants fully justified the effort of the week.

A few of us finished off the week with a visit to Orchard Farm Tower, a curious circular 'Lairds Tower' where *Asplenium ceterach, A. ruta-muraria, A. trichomanes* and *A. adiantum-nigrum* were happily spreading.

Our warmest thanks to Paul Ripley for providing such an interesting and well-planned week amongst the ferns of Galloway.

photo: A. Leonard

Monts du Cantal, France: Anthony Pigott, Pam Labatut, France Rakotondrainibe, Clive Jermy, Kurt & Helga Rasbach, Michel Boudrie, Paul Ripley, Andrew Leonard, Ronnie Viane, Alison Paul, Wilfried Bennert, Margo Ladell, Martin & Hazel Rickard, Rémy Prelli, André Labatut, Hervé Lassagne, Ilkka Kukkonen, Eric Vallé

CENTRAL FRANCE - 21-28 August

A. & P. Labatut

"D'une fougère à l'autre". . . .

The BPS decided to go abroad again for a week's field meeting, this time to the French Massif Central on the invitation of Michel Boudrie, Rémy Prelli and André Labatut. For five days the party was accommodated at the Station Biologique at Besse-en-Chandesse, the University of Clermont-Ferrand's field station. Besse-en-Chandesse (alt. 1000m), some 50km south-west of Clermont-Ferrand, is right in the heart of the central uplands of the Massif Central, an area characterised by volcanic domes and high plateaux. It is near Puy de Sancy (1885m), the highest peak in central France. For the last night the party put up at a hotel in St. Flour, and thus for a full week a group of about 25 insatiable and indefatigable pteridologists were led from fern to fern in remarkably diverse scenery from the high volcanic peaks of Mont Dore and Cantal to the austere, denuded basaltic plateaux of Aubrac and through the down-faulted basin of the Allier river. The weather throughout was unseasonable being mediocre to fair, at best.

All participants expected on Saturday evening at Besse arrived safely and had plenty of time to take up their quarters before dinner. These were: Margo Ladell, Anthony Pigott, Alison Paul, Andrew Leonard, Martin, Hazel and Edward Rickard, Paul, Linda, Gillian and Katie Ripley from Britain, Ilkka Kukkonen from Finland, Wilfried Bennert, Helga and Kurt Rasbach from Germany, Michel and Agnes Boudrie, Rémy Prelli, André and Pam Labatut from France. Clive Jermy from Britain and Ronnie Viane from Belgium joined us the next day. With the arrival of France Rakotondrainibe and Robert and Renée Deschatres from France later in the week, the party was complete. This list shows the impressive amount of expertise on every aspect of pteridological research that was gathered here at Besse. The quality of discussions and information exchanged was thought-provoking.

After dinner Michel welcomed the party and Rémy briefed us all on the excursion for the following day in the cirque de Chaudefour which he knows well having mapped the plant associations of the area in 1975.

Sunday 22 August. Eric Vallé, custodian of the Natural Reserve of Chaudefour (part of the Auvergne Volcano Park) was our guide for this day excursion. On our way up to the ridge of the cirque de Chaudefour from Chalet Ste. Anne (alt. 1100m), the first ferns recorded from the wooded slopes were *Polypodium vulgare, Athyrium filix-femina, Cystopteris fragilis, Dryopteris filix-mas* and *Equisetum arvense,* with carpets of *Gymnocarpium dryopteris* here and there. In the wettest parts were extensive stands of *Equisetum sylvaticum* and some *Blechnum spicant.* The red berries of *Sambucus racemosa* attracted attention as this shrub is not native to Britain. However, things really got started with the first *Dryopteris dilatata* and *D. expansa.* A good many plants were closely examined, compared and discussed but no hybrid was found. Above the forest zone we came into full view of the granite dykes and lava walls, hollowed out by Quaternary glaciers into this majestic natural amphitheatre of Chaudefour. By then the rucksacks seemed heavier, and the path steeper!

The weather started to deteriorate; however, it was decided to continue the climb. Lunch was had at an altitude of 1700m at the foot of a cliff by a promising scree covered with *Athyrium filix-femina* and *A. distentifolium* inter-mixed with *Dryopteris filix-mas* and *D. oreades,* where it was hoped to find *D.* x *mantoniae* and/or *Athyrium* x *reichsteinii,* but neither was seen. After lunch, as the fog had cleared, we continued our climb upwards to a semi-bare patch of well drained ground near the top of a ski-lift (alt. 1800m) where there was a fairly dense stand of *Diphasiastrum alpinum* with strobili and *Huperzia selago* complete with bulbils and sporangia. These were abundantly photographed. The path going down was precipitous at times and had to be negotiated carefully. Three *Botrychium lunaria* conveniently lined up beside the path caught our attention. Then a waist-high stand of *Athyrium filix-femina* and *A. distentifolium* was reached, which Helga thought looked promising for the hybrid. We all surged into the tall plants leaving no frond unturned, but to no avail!

Finally the car park came into view. Eric then led us to a line of thermal springs oozing from the ground. We were invited to have a taste; unfortunately this did not manage to sooth our aching knee-joints after such a hard day's climb!

Monday 23 August. This was essentially a *Dryopteris affinis* complex day. We set off in very thick fog and intermittent rain for the steep wooded slopes of the Gorges de la Rhue at St-Amandin (alt. 700m). The excursion was led by Hervé Lassagne of the French National Forestry Commission. As we slithered down from the beech wood zone on top, to the *Albies pectinata* zone at the bottom of the gorge (note the curious inversion of the tree zones), we came across old masonry wolf traps (pits) which according to Hervé were in use until the beginning of the century. Then came the ferns: *Polypodium vulgare, Polystichum aculeatum, Athyrium filix-femina, Phegopteris connectilis, Gymnocarpium dryopteris, Oreopteris limbosperma, Asplenium trichomanes, Dryopteris dilatata, D. filix-mas, D. expansa, Pteridium aquilinum* and of special note a recently discovered population of *D. remota*. Various specimens of the *D. affinis* complex caused a lot of discussion and conjecture before they were provisionally ascribed to subsp. *borreri sensu lato.* Anthony then explained why the concept of morphotype was preferred by some to that of subspecies for the time being, pending a better insight into the full range of variation within the apomictic *D. affinis* complex. Meanwhile, Martin spotted among the boulders a fine clump of *D.* x *deweveri* with both parents, just before we were submitted to a serious downpour and all disappeared under colourful rainwear. After looking at a fine stand of *Equisetum hyemale* we left the ravine for the village, and all retreated to the shelter of the village café to eat our sandwiches. The rather forbidding hostess who chided those who requested tea or cocoa instead of black French coffee straight from the pot, insisted on counting her coffee spoons before we left!

Fortunately by then the rain had stopped and we proceeded to another part of the gorge a few miles down river to look at more *D. affinis.* While fresh discussions developed on good specimens of *D. affinis* morph. *cambrensis,* Kurt studied plants of the *Asplenium trichomanes* group and Ilkka showed great interest in *Pteridium aquilinum,* such a change for him from *P. latiusculum.* The abundance of *A. septentrionale* impressed the British visitors. *Dryopteris filix-mas, Athyrium filix-femina* and *Polypodium vulgare* were also recorded. Further heated discussions on the *D. affinis* morphotypes resulted in a 60km drive to study another locality and a different habitat: vallée de Piallevedel at Chalvignac, west of Mauriac. Here were found two distinct morphotypes, both similar to subsp. *cambrensis* Fraser-Jenkins and one of them resembling the morphotype *cambrensis* of Britain. Other ferns noted there on the roadside rocks were *Asplenium trichomanes* subsp. *quadrivalens* and subsp. *trichomanes, A. adiantum-nigrum, A. septentrionale, Polypodium vulgare, Polystichum setiferum* and *P. aculeatum.*

Tuesday 24 August. It was wintry and foggy all day, so we only had very rare opportunities to admire the striking scenery surrounding the four lakes we visited in search of *Isoetes.* Tuesday was indeed *Isoetes* day, and our rallying banner through the wafting fog was Clive's fancy *Isoetes* rake which caused a stir among alarmed local anglers! Lac Chauvet at Picherande (alt. 1160m), formed in a collapsed volcanic chimney, yielded both *I. echinospora* and *I. lacustris.* The first *I. echinospora* of the day was found due to Andrew's keen eye. Also present were *Equisetum fluviatile* and *E. arvense.* After a brief stop to glance at *E.* x *litorale,* we drove to the glaciated Lac Bourdouze near Besse (alt. 1100m) to see more *I. lacustris* and *E. fluviatile.* On the lake's edge among the tussocks *Ligularia siberica* was in full flower. This rare relict plant of glaciation is protected in France.

Incidentally, mention should be made here perhaps, of plants seen other than ferns. The Massif Central possesses a rich flora but late August is not the time to see it at its best. However, some plants were still in flower. The thistle family dominated with *Cirsium erisithales* (melancholy thistle) very much in evidence, the two *Cicerbitas, alpina* and *plumieri* and purple lettuce *(Prenanthes purpurea).* Also seen were several bellflowers *(Campanula),* monkshood *(Aconitum napellus)* and wolfsbane *(Aconitum vulparia)* with yellow flowers, not native to Britain, several members of the Pink family and gentians: marsh gentian *(Gentiana pneumonanthes),* field gentian *(Gentianella campestris)* and the yellow gentian *(Gentiana lutea* subsp. *lutea),* the roots of which are used to make a rather bitter liqueur and aperitive, and the beautiful grass of Parnassus *(Parnassia palustris)* to name but a few.

After this flowery interlude let us go back to Lac Bourdouze where we had lunch, some under the shelter of a fisherman's rustic hut, others simply in the rain. Afterwards we proceeded to Lac Godivelle d'en Bas (a shallow, glaciated lake) and Lac Godivelle d'en Haut (volcanic crater lake), both at Godivelle (alt. 1200m). *I. echinospora* was found in the former and walking along the water's edge of the latter we collected a good number of stranded *I. lacustris* from the drift line for further investigation. No hybrids were found in the material collected, but *I.* x *hickeyi* might well be present in some of these lakes. Alas, continuing bad weather forced us to cancel the visit to a nearby peat bog to see *Lycopodiella inundata.*

After this rather wet day, we returned to base and the prospect of a longer evening session in the conference room. It was a regular feature to assemble after dinner for a studious hour or two, if not more. Microscopes were brought out for spore examination, critical plants were scrutinised and discussed, notes were taken, Michel's herbarium sheets of *Dryopteris affinis, Cystopteris fragilis* and *C. dickieana* were examined. Last but not least, fronds collected in the day were sorted out, labelled and deftly prepared for pressing by Alison and Clive among others. Needless to say all these activities were conducted, with remarks and comments, in an atmosphere of good humour. As a treat on several occasions we were shown slides: ferns of Madeira by Michel, ferns of Guadeloupe by Rémy, ferns of Nevis by Martin and ferns of Greece by Helga, Kurt and Ronnie. All were greatly appreciated by the audience.

Wednesday 25 August. This was to be a touristic day with ferns thrown in. We set off in thick fog towards the heart of the Mont-Dore massif. At the Col de la Croix St. Robert we suddenly emerged into full sunshine and had a perfect view of all the mountains in front of us. Travelling via Mont-Dore, the famous spa huddled at the bottom of Puy de Sancy, we reached the viewpoint at Col de Guéry (alt. 1265m) from which we had a splendid panorama of the remains of the formidable volcanic system of the Mont-Dore massif. Michel expertly explained the formation of the Auvergne stratovolcanoes during the Tertiary period. Subsequent glaciations eroded the edifices which once stood at 2500m, leaving the towering phonolite necks of Roche Tuilière and Roche Sanadoire for us to admire. A short stop at the base of Roche Tuilière enabled us to study the columnar structure of the rock, resulting from thermal contraction during the cooling of the lava, and to test the ringing sound of the rock when a slab of it is struck (clink-stone).

It was then time to visit the famed romanesque church at Orcival. Rémy pointed out various architectural details of this 12th century edifice and hinted at possible oriental influences. After visiting the inside of the church, attention was turned to the outside walls to locate the diminutive clump of *Asplenium trichomanes* subsp. *pachyrachis* recorded there in 1988. Edward, who has an undoubted flair for this subspecies, found it growing in the damp shade of a nearby artificial grotto with *A. trichomanes* subsp. *quadrivalens* and their hybrid *A. trichomanes* nothosubsp. *staufferi*. The particular luxuriance of the three plants in their shady habitat was admired. On a nearby mortared wall, the same three taxa were found together with *A. ruta-muraria*. *A. trichomanes* subsp. *quadrivalens* was the subject of another debate led by Ronnie and Kurt; investigations now in progress should eventually reveal whether or not what is now named subsp. *quadrivalens* is actually a mixed bag containing several taxa.

After lunch, the party was led to see *Cystopteris dickieana* near Puy de la Vache at St. Genès-Champanelle (south-west of Clermont-Ferrand). *C. dickieana* grows there with *C. fragilis* at 950m on scoriaceous lava. Its habitat is quite different in every respect from that of the Kincardineshire tide-washed sea-caves. The fronds, still beautifully fresh and green for the time of the year due to the wet summer, were attentively studied. In gross morphology they scarcely differed from the oblong fronds of *C. fragilis* growing on the same rock and yet the spores - you should have seen all the portable microscopes in action by the roadside! - were undoubtedly rugose-verrucose. Other ferns seen in the vicinity were *Pteridium aquilinum*, *Asplenium trichomanes* subsp. *trichomanes*, *Dryopteris filix-mas* and *Athyrium filix-femina*.

Our next touristic cum fern stop was at Saint-Saturnin, a picturesque village which prides itself on its old church and castle. On the mortar of the village walls thrive dense clumps of *Asplenium ruta-muraria*. Ronnie closely studied the micromorphology of their curious wedge-shaped segments, hoping in vain to find *A. lepidum* subsp. *haussnechtii*, collected here by Héribaud-Joseph in 1901. *A. trichomanes* subsp. *quadrivalens*, *A. septentrionale*, *A. adiantum-nigrum* and *A. ceterach* were also noted. On the rocks by the river Monne and on its banks were *Polypodium interjectum*, *Dryopteris filix-mas* and *Asplenium scolopendrium*; the latter is quite rare in the Auvergne. But the day had another treat in store for us. On our way back to base we made a small detour to Neschers (alt. 450m) to see *Asplenium foreziense*. It grows on granite rocks with *A. septentrionale*, *A. adiantum-nigrum*, *A. trichomanes* s.l. and a hybrid which pending further cytological investigation was named *A.* x *ticinense*, thereby postulating the presence of *A. onopteris* in the vicinity (old herbarium specimens do provide evidence of this species growing near Clermont-Ferrand). And so to Besse as Pepys would have said!

Thursday 26 August. We started the day with a nice drive along the Rhue valley, through Condat and up the Santoire valley with its tantalising ferny gorge. Beyond Le Claux we went up the steep winding road to the Pas de Peyrol, the highest road pass in the Massif Central (1589m). While some of the cars were driven to the other end of the planned itinerary to provide a nice long one way walk, the party waiting at the foot of Puy Mary (alt. 1787m) had time to admire the magnificent sweep of volcanic scenery, standing as they were on the steep edge of the caldera of the former Cantal volcano (one of the most extensive in Europe with its base 70km in diameter). Eric Vallé and Hervé Lassagne, our two guides, led us along the ridge from peak to peak high above the ice-carved valleys of the Mars and the Jordanne rivers on either side, until we reached the phonolite scree of the northern slope of Roc d'Hozières. It was

Martin who sighted the rare small clumps of *Diphasiastrum alpinum* which we had been asked to find in the heathery turf. Meanwhile Alison spotted some *Lycopodium clavatum*. Other pteridophytes seen in the vicinity were *Huperzia selago, Dryopteris filix-mas, D. oreades, D. expansa, Athyrium filix-femina, A. distentifolium* and *Gymnocarpium dryopteris*. After lunch, we resumed our walk to the Roc des Ombres through the Brèche d'Enfloquet, noting on the way *Phegopteris connectilis* and *Botrychium lunaria*.

Past the Brèche, we finally found ourselves (alt. 1600m) at the foot of the ominous northern cliff-face of Roc des Ombres, rich in the highlight of the day, *Woodsia alpina!* No sooner was the locality within reach than a short but violent downpour drenched us all. Needless to say, when the rain ceased feverish activity resumed, everyone looking into all the nooks and crevices. But time was short and Michel tried to lure us away from the site and down the slippery grassy slope . . . We did have time, however, to note also *Cystopteris fragilis, Polypodium vulgare* and *Polystichum lonchitis*. On our way across the steep grazing lands towards the tree-line, more screes were explored with *Athyrium filix-femina, A. distentifolium, Dryopteris filix-mas, D. oreades, D. dilatata, Gymnocarpium dryopteris* and *Phegopteris connectilis*, with *Blechnum spicant* in the boggy areas. Just before entering the forest a group photo was taken.

As we descended the long path that zigzagged through the beech and spruce forest (from 1400m to 1100m) the following ferns were seen: *Gymnocarpium dryopteris, Athyrium filix-femina, Dryopteris filix-mas, D. dilatata, D. affinis* morph. *borreri, Blechnum spicant* and *Polystichum aculeatum*. Thanks to Wilfried's keen observation we were also able to see the only clump of *Dryopteris* x *mantoniae* recorded for the meeting. When we finally reached the road and the cars, Michel showed us *D.* x *ambroseae* among its parents *D. expansa* and *D. dilatata*.

On the way back, a brief stop after a hair-pin bend just below the Pas de Peyrol gave us *Polystichum aculeatum* and *P. lonchitis*. Further down still, although time was running short, some managed another halt in the gorge of the Santoire, where Paul could verify to his delight, that when *Asplenium septentrionale* and *A. trichomanes* subsp. *trichomanes* grow together, the hybrid alternate-leaved spleenwort is not infrequent.

Friday 27 August. We said good-bye to Besse and headed for St. Flour via Vic-le-Comte, Issoire and Brioude. The fern stops en route were under the leadership of Robert Deschatres. At Enval, very near Vic-le-Comte, *Asplenium trichomanes* subsp. *pachyrachis* nestling in the crevices of an overhanging limestone rock-face provided a good illustration of the most typical habitat of the plant elsewhere in France. *A. scolopendrium* and remarkably large fronded *Polypodium interjectum* were noted as well. We then proceeded to the wooded riverside of the Allier at Perthus, near Issoire, to see extensive and vigorous patches of *Equisetum* x *moorei* colonising the sandy flats under a light canopy of maple and lime trees. For most of the group this was an uncommon sight. Lunch was had further south at Beaulieu near St. Germain-Lembron where the river Allagnon meets massive rock outcrops on its left bank. For the pleasure of spleenwort buffs the following plants were seen: *Asplenium foreziense, A. septentrionale, A. trichomanes* subsp. *quadrivalens* and *trichomanes* and *A. alternifolium* nothosubsp. *alternifolium*.

The serpentine outcrop at St. Prejet-Armandon, south-west of Brioude was indeed worth the detour. Not only was *Notholaena marantae* at its very best (to the photographers' delight) but the serpentine form of *Asplenium adiantum-nigrum* was there too, displaying its full range of morphological mimicry of the diploid *A. cuneifolium*. *A. ceterach* and *A. septentrionale* were also present. We then drove to our hotel in St. Flour for our

photo: A.M. Paul

Anthony Pigott, France Rakotondrainibe, Ronnie Viane, Andrew Leonard and Hazel Rickard examine serpentine ferns near Brioude, France.

last evening together. After dinner, in his capacity as a Vice-President, Martin gave a farewell speech and thanked the leaders for an interesting and enjoyable week, while Margo presented each leader with a book signed by all the participants.

Saturday 28 August. On our way to the last locality scheduled for this field meeting in central France, a brief halt was made near Chaudes-Aigues to look at *Cystopteris dickieana,* this time all dried up but identifiable by the spores which Wilfried checked with his microscope balanced on the roadside crash barrier. Also noted on the nearby rocks were *Athyrium filix-femina, Asplenium trichomanes* subsp. *trichomanes, A. septentrionale, Dryopteris filix-mas* and *Polypodium vulgare.*

The remarkable clubmoss moorland of Le Puy-de-la-Tuile, at Deuz-Verges (alt. 1240m), was agreed to be a fitting end to this BPS field meeting. Of the five clubmosses which occur in the area, the party saw the common *Lycopodium clavatum* and the two most rare ones. *Diphasiastrum complanatum* subsp. *issleri,* which grows here in dwarf heath of *Calluna-Vaccinium,* is a fascinating plant indeed in as much as its status is far from being settled. Complex debates and investigations are under way; it is generally thought to have originated as a hybrid but its parentage is still questioned. The presence, a few hundred metres away, of *Diphasiastrum tristachyum* was an added stimulus. Both plants and habitats were thoroughly studied and commented upon. Where *D. tristachyum* has not been eliminated by the conifer afforestation started 20 years ago, it suffers from the encroaching canopy of *Calluna* which smothers it. Fortunately the area is now protected; experimental conservation measures have been introduced, monitored by the

Forestry Commission and botanists. Strips of land of variable widths have been cleared of *Calluna* and reconquered by the clubmoss. Some plants had, however, suffered from drought. Quite expectedly, methods and results were amply discussed, proposals were made, and thus the BPS meeting to central France came to an end.

After the departure of Andrew, the Rickards and the Ripleys, the party continued on to Villefort in the Cévennes where a three-day workshop on the *Dryopteris affinis* group was to take place under the auspices of the IAP. We were joined here by further distinguished pteridologists and botanists from France, Germany, Spain and Italy for very informative exchanges and heated discussions as well as fine fern discoveries in spectacular surroundings. Such was the order of the day.

[Many thanks to Michel, André and Rémy for organising such a successful meeting.]

NORTHUMBERLAND - 17-19 September

A.R. Busby

During a short period that a meteorologist might call a 'window' in the weather, nine members assembled at Morpeth for a weekend in sunshine amongst ferns. Our first site was Cullernose Point near Craster (46/26-18-) to see the large quantity of *Asplenium marinum* on the cliffs. We also noted *Pteridium aquilinum* and *Equisetum arvense* along the cliff-top path. In Craster we found *P. aquilinum* and *Dryopteris filix-mas* while on the roadside wall were *Asplenium ruta-muraria, A. trichomanes* and *A. ceterach.*

As we drove into Craster we noticed a wood which is part of the grounds of the Cottage Inn Hotel (46/258199). It looked particularly ferny and well worth exploring. Here we found *Athyrium filix-femina, Dryopteris dilatata* and *D. affinis* morphotypes *borreri, robusta* and *affinis.*

photo: A.R. Busby

Ray & Brenda Smith, Linda, Mick & Trisha Craddock, Barbara Porter, Anthony Pigott,
John & Margaret Collins posing with *Asplenium marinum* at Cullernose Point, Northumberland.

After taking lunch at the 'Jolly Fisherman' in Craster, we moved on to a heavily wooded disused railway line near Oxon Wood at 46/13-11-. This proved to be very rewarding with *Pteridium aquilinum, Dryopteris filix-mas, D. dilatata, D. affinis* morphotypes *borreri* and *affinis, Asplenium scolopendrium, Blechnum spicant* and *Oreopteris limbosperma* being noted.

Well-pleased with the ferning so far, we drove on to Rothbury to visit Addycombe Wood at 46/05-02-. This proved to be a mistake, the wood comprising mainly conifers with a margin of beech trees. Due to commercial felling, the ground was badly churned up and a short walk confirmed that it was a poor site for ferning with only *P. aquilinum, D. filix-mas* and *D. dilatata* seen. We decided not to waste any more time there and went on to visit the National Trust property Wallington Hall (45/02-84-). The grounds around the hall contained large plants of *D. filix-mas* and in the woods we saw *P. aquilinum, D. dilatata, D. affinis* morph. *borreri* and *Polystichum setiferum.*

However, it was within the walled garden that we found a wide selection of hardy ferns. The list included *Polystichum setiferum* 'Depauperata', *P. setiferum* 'Divisilobum', *P. aculeatum, P. munitum, Matteuccia struthiopteris, Polypodium* sp. 'Cornubiense', *P. vulgare, Onoclea sensibilis, Athyrium filix-femina* and *Dryopteris filix-mas* 'Grandiceps Wills'. On the walls around the garden we noted *Asplenium ruta-muraria, A. trichomanes* and large quantities of *A. scolopendrium.* The walled garden also contained a conservatory with several ferns including *Adiantum raddianum, Asplenium bulbiferum, Cyrtomium falcatum, Davallia fejeensis* and *Pteris cretica.*

On Sunday morning we travelled west to Bellingham to visit Hareshaw Linn (35/84-85-). Access to this very attractive valley is from the car park in Bellingham and can be found at 35/840834. Jennifer Ide had kindly suggested this site where she had recently discovered a new record for *Asplenium trichomanes* subsp. *pachyrachis.* We began our walk of about 2km to the Linn (waterfall) and recorded *Pteridium aquilinum, Dryopteris filix-mas, D. dilatata, D. affinis* morph. *borreri, Equisetum arvense, Athyrium filix-femina, Blechnum spicant, Oreopteris limbosperma, Polystichum aculeatum, Phegopteris connectilis* and *Gymnocarpium dryopteris.* At the 'Linn' we found *Cystopteris fragilis, Asplenium trichomanes-ramosum (A. viride)* and, best of all, *A. trichomanes* subsp. *pachyrachis.*

Our visit to the 'Linn' had taken all morning and we were reluctant to leave this fascinating area but lunch called and we found a pleasant snack bar in Bellingham, after which we went on to end the weekend at the English Heritage property, Belsay Hall (45/08-78-).

Belsay Hall has a remarkable quarry garden with high sandstone cliffs that provide home and shelter for many ferns: *Pteridium aquilinum, Dryopteris filix-mas, D. dilatata, D. affinis* morph. *borreri, Athyrium filix-femina, Asplenium scolopendrium* and a few *Polystichum setiferum.* Anthony Pigott also found what he considered to be a hybrid between *D. filix-mas* and *D. affinis* morph. *borreri.* In addition to the local ferns we also found *Dryopteris erythrosora, Adiantum pedatum, Matteuccia struthiopteris, Polystichum munitum, P. polyblepharum* and *Blechnum chilense.*

This was a fitting end to an excellent weekend made all the more enjoyable by the information provided by Jennifer Ide. My thanks to all those who attended and helped to make the weekend so enjoyable, but especially to Anthony Pigott for injecting such valuable assistance in determining the *Dryopteris affinis* complex.

REGIONAL MEETINGS 1993

MIDLANDS

A.R. Busby

'Welcome to Spring' Flower Show - 17-18 April. Along with brighter days, fading daffodils and the sound of the cuckoo, this show once again presented itself as a harbinger of the new season. Exhibits included all sections of gardening interest, cacti and succulents, alpines, pot plants and floral arrangements, but it was the hosts of daffodils expertly displayed by members of the National Daffodil Society that brightened the large hall of the Arden School, Knowle.

Once again, two classes for ferns were staged but despite enhanced prize money, it still failed to attract or encourage local gardeners to grow and show ferns. The results were:
Class 150, Three Pot Ferns (Hardy or indoor): 1st - G. Crook *(Dryopteris affinis* 'Congestum', *Athyrium nipponicum* 'Pictum', *Polystichum setiferum* 'Congestum'), 2nd - D. Wood (*Adiantum subpumilum, Adiantum aleuticum, Asplenium trichomanes*), 3rd - R.J. Smith (*Pellaea hastata, Pellaea rotundifolia, Asplenium bulbiferum*) (3 entries).
Class 151, One Pot Fern (Hardy or indoor): 1st - R.J. Smith (*Pyrrosia lingua*), 2nd - W. Morgan (*Nephrolepis* sp.), 3rd - D. Wood (*Athyrium nipponicum* 'Pictum') (4 entries).

I represented our Society with a small stand of indoor ferns which provoked some complimentary comments from visitors and just one enquiry about membership. Other societies represented were the National Auricula Society and the West Midland Group of the NCCPG.

Thanks are due to Mrs D. Watson of the Solihull Horticultural Society for providing the space for our stand and to Ray Smith for assisting with the stand during the show.

Matt and Margaret Busby's Open Day - 8 August. Twenty-three members and guests assembled at 16 Kirby Corner Road, Canley, Coventry, for an afternoon of ferny chat and refreshments. It was four years since our last open day and we had made several changes to the garden which hopefully gave a fresh impression to our visitors. The major problem that we have to contend with is the ever-present bindweed that envelopes the garden to the detriment of the ferns. It was with much pride that we were able to display a recently acquired glazed case made by local member Andrew Kyte and furnished with tufa, mosses and several ferns.

During the afternoon, the gathering toured the nearby greenhouses of the University of Warwick's Department of Science Education (by kind permission of the Chairman, Mr Michael Wardle).

Over the last four years my collection of hardy ferns has increased largely due to the kindness and generosity of fellow members and I take this opportunity to thank them warmly.

Clive and Doreen Brotherton's Open Day - 5 September. On this Sunday seventeen members and guests enjoyed a warm bright day in the Brotherton's garden in Sedgely, near Dudley. Clive's fern collection is a magnet for those who yearn to grow what might be considered in the world of fern growers as the most choice of ferns, namely the *Cheilanthes*. Those new to fern growing are often quite bewitched by this most attractive group. I overheard one visitor remark that they were quite 'mind-boggling'. Unfortunately, they do have a reputation for being difficult so I asked Clive to list one or two that a beginner might succeed with. Clive suggested *Cheilanthes tomentosa* which might prove to be hardy in all but the coldest areas, *C. alabamensis* and *C. myriophyllum* for a coldhouse and *C. eatonii* which is untried by Clive outside. He had several species planted out amongst his alpines as a trial and one or two had been outside for a couple of seasons. Most of his collection are pot-grown and he uses a soil-based compost with about 50% grit added to improve drainage. The greenhouse is kept frost-free, with just a little heat so there is no sweaty atmosphere. Watering is tricky: lots of watering in the summer but careful attention only to keep the soil moist in winter. It all sounded very easy but I have tried and failed with this group before and it cannot be denied that it is an acquired skill, one that Clive has mastered.

Our thanks to Clive for allowing us to spend an afternoon admiring his collection and to Doreen for the splendid refreshments provided.

LEEDS & DISTRICT

York University - 17 April. This Saturday saw the start of our 1993 programme when we met at the University of York for our very well attended AGM to discuss the events of the past year and the programme for the coming year. After lunch at one of James Merryweather's 'locals', we returned to the University for an extremely interesting illustrated talk by Dr Trevor Walker of Newcastle about 'Ferns of the Tropics'. All present were very thrilled to see the very detailed slides of these plants and their habitats. Many thanks to Trevor and also to James who made arrangements for the room at the University.

Jack Bouckley

Bilton Gale, Harrogate - 3 May. On Mayday, the group rented a plot at Bilton Gale, Harrogate, to sell a few plants and to talk about the Society to the general public. Those on the stand were kept very busy all day as old faces appeared and we were very pleased to help with the many queries we get every year. This year a person who I had never seen before came over to us and asked if I knew Fred Jackson. My reply was that I did not know him very well, but I was sure that I had met him. This person was none other than his son who was in this country for a holiday from Australia.

Jack Bouckley

Richmond, North Yorkshire - 5 June. A select band of five members met on what proved to be the first really hot day of the year at Round Howe car park to the west of Richmond. The expedition was divided into two parts, in the morning the River Swale's south bank towards Richmond, and after lunch the northern side of the Swale in the opposite direction.

A footbridge from the car park gave access to the south side, which here is formed of precipitous limestone cliffs, well wooded, and with pleasant meadows adjacent to the river. On entering the woods, the adit of the Billy Bank copper mine was passed, where it is possible to collect small pieces of rock showing blue/green mineralisation (azurite and malachite), but alas no cuprophytic pteridophytes! The ferns were chiefly found associated with the trees and included the common species one would expect in this habitat (*Dryopteris filix-mas, D. dilatata, D. affinis, Athyrium filix-femina* and *Polystichum aculeatum*). Not so common, indeed very scarce in the Dales, were some marvellous specimens of *Asplenium scolopendrium*, and on a fallen tree, *Polypodium vulgare. Cystopteris fragilis* and *A. ruta-muraria* were found on a wall near the river bridge which affords excellent views of Richmond Castle. Our return to the cars was on a higher level, along the cliff edge overlooking the riverside meadows and Culloden Tower, a notable local landmark. Two horsetails, *Equisetum arvense* and *E. telmateia*, completed the picture at Round Howe just before lunch.

The way westwards took the party through scrubby woods and then fields into Applegarth. The same range of woodland ferns was observed, perhaps surprisingly without *P. aculeatum* or *A. scolopendrium*; not a polypody to be seen either! In the more open hedgerows, bracken was present, and a rather marshy area of springs was searched diligently, but unsuccessfully, for the marsh horsetail. *E. palustre* was, however, soon added to the morning's list, growing with the two horsetails seen earlier, in Applegarth, not far from the Swale. A climb brought the party to the Coast to Coast footpath, popularised by Wainwright, and back into the woodland beneath Whitcliffe. Here the shade lovers re-emerged, but a *Blechnum spicant* the leader was convinced he had seen during reconnaissance in March could not be found! Back into the open, it was downhill all the way through grazing land back to the car park. It was interesting to discover (thanks to Jack) that a wall on the main Richmond/Reeth road proved an admirable habitat on its shady side for the wall ferns seen earlier, *A. ruta-muraria* and *C. fragilis*.

A pleasant, albeit hot, day out, marred only by the poor attendance; it would be regretted should this kind of field trip die out due to lack of support for whatever reason.

R.P.H. Lamb

Affinis Watch – 3 July (Leader Major R. Unett)

Tetrad 34/9238 Wycoller near Colne, Lancashire. Four met at Wycoller car park to cover this tetrad, mainly in search of *Dryopteris affinis*. It was not an extremely ferny place but in the wooded area of Wycoller Beck at the south-east of the tetrad there were plenty of *D. dilatata* and *Athyrium filix-femina* but no *D. affinis*. *Cystopteris fragilis* was found on some buildings and *Equisetum arvense* and *E. telmateia* were seen. After lunch the south-west area was searched but here were young trees with no shade and no ferns. However, *Dryopteris affinis* morph. *borreri* and some *Equisetum sylvaticum* were growing at 34/931391.

Tetrad 34/9832 near Hebden Bridge, West Yorkshire. This was not a very promising area, about 75% of it being moorland but the south-east held a bit more hope than the rest of the tetrad. Near to 34/998327 two plants of *D. affinis* morph. *affinis* were found. Paddock Beck is largely unshaded but there were plenty of *Athyrium filix-femina* and *Oreopteris limbosperma* with the occasional patch of *Blechnum spicant*, and *Pteridium aquilinum* on the slopes. Further plants of *D. affinis* morph. *affinis* were seen at 34/998329 and 34/996325.

Jack Bouckley

Wensleydale, North Yorkshire – 14 August. This Saturday was one of the few fine days of the year so everyone was in good form when Jack Bouckley led a party of sixteen round some of the Dales 'forces' or waterfalls.

The first were the middle and lower forces at Aysgarth, Wensleydale (44/016887) where the river Ure cascades down two limestone formations, looking very impressive, especially following heavy rain. On the way down to the falls we saw *Pteridium aquilinum*, *Dryopteris filix-mas* and *D. affinis* morph. *borreri* followed by a very delicate *Athyrium filix-femina* which was photographed by a number of the party. *D. dilatata* was abundant. There were also a few *Polystichum aculeatum* with some *Cystopteris fragilis*, *Asplenium* *trichomanes* and *Polypodium vulgare*.

We then moved westward to 34/867913 which is the site of an inn where we enjoyed our solid and liquid refreshments. The entrance to Hardraw Force, near Hawes, Wensleydale, is through the inn. A good path leads from the pub to the falls and along this we found similar ferns to those at Aysgarth but there was also a very large plant of *Asplenium scolopendrium*, unusual in this area and also some *Polystichum setiferum*. There were many *A. ruta-muraria* on the wall outside the inn.

Leaving here we went back to Hawes for a conducted tour round the local rope manufacturing works owned by Mr and Mrs Annison. Mrs Ruth Annison explained the different stages and methods used at this very busy establishment as she led us round. After about an hour we set off to Cotterdale Force, 34/850915, an interesting area just north of the A684 at Birk Rigg where we were quite surprised to see a well grown plant of *Oreopteris limbosperma* at the side of the beck; we saw nothing else new.

Jack Bouckley

Northern Derbyshire – 11 September. Following a week of rain, it was quite a relief to have a fine day for this first venture into the southern Pennines. The party comprised thirteen members and friends who all managed to arrive at the starting point on time, in spite of having to traverse Sheffield on a Saturday.

The first location at Abney Clough (43/195795), a valley with acidic soil, revealed some insight into the treasures in store for us: *Athyrium filix-femina, Dryopteris affinis, D. filix-mas, D. dilatata* and *Pteridium aquilinum* (of course) all in abundance. A little farther down the dale we saw specimens of *Cystopteris fragilis, Blechnum spicant, Phegopteris connectilis, Gymnocarpium dryopteris, Oreopteris limbosperma* and, in two old bank walls, *Asplenium scolopendrium* and *A. adiantum-nigrum*. Not a bad start for an area within half a mile of the cars!

We then negotiated the narrow roads in a limestone area to reach an old lead working, Dirtlow Rake (43/152820). In this remarkable place we viewed *Cystopteris fragilis, Asplenium trichomanes, A ruta-muraria* and *A. trichomanes-ramosum (A. viride)* jutting out in abundance from the vertical sides of a ravine formed when the lead-ore was raked out a century or more ago.

Next a respite at the Barrel Inn in Bretton, with a wonderful panoramic view from Hucklow Edge. Feeling replete after a very convivial lunch, we progressed in convoy through Eyam (noted in history for its affliction with the Great Plague) to Coombesdale (43/220743). On the limestone screes, again near to an old lead working, we saw drifts of *Gymnocarpium robertianum* and on limestone crags only a short walk away were more *Asplenium adiantum-nigrum, A. ruta-muraria, Polypodium vulgare* (a little) and *P. interjectum*. We looked for the *Botrychium lunaria* reported here but were apparently too late in the season.

I must express my appreciation to Mrs Betsy Kohler, who, despite being prevented by illness from going on a reconnoitre, pointed me in the right direction and then co-led this day. I still couldn't have located a fraction of these ferns without the help of two Derbyshire botanists, Grace and George Wheeldon – they were magnificent and most generous with their assistance. Altogether we saw and identified eighteen ferns and also the fern allies *Equisetum arvense* and *E. palustre*, on a lovely late summer's day.

Ron Cole

Woodchester Park, Gloucestershire - 6 June. Dr Hards had managed to get permits for the Gloucestershire Naturalists and ourselves to visit Woodchester Park, a wooded valley near Stroud (32/809014). The Park has an unfinished Victorian mansion, five deep fish-ponds, some unimproved woodland, a lot of mature plantations and Victorian records of *Lycopodium clavatum* and *Diphasiastrum complanatum* subsp. *issleri* ('morph. *decipiens*') (as *L. complanatum*).

It was a beautiful day. There were ornithologists and lepidopterists, botanists and beetle fanciers and we made our leisurely way from the field centre, down the valley, round the back of the mansion, past the fish-ponds to the boathouse and back again across a plantation. We saw *Blechnum spicant, Dryopteris affinis* morph. *borreri, D. filix-mas, D. dilatata, Polypodium interjectum, Polystichum aculeatum, P. setiferum, Asplenium scolopendrium, A. trichomanes* and at long last *Equisetum telmateia*, but no *Lycopodium*. The lepidopterist caught flying things to show us, and the ornithologists pointed to the canopy and identified the unseen by their songs.

After lunch we went our separate ways, Dr Hards and I to Sapperton (32/944034) to see that the *Gymnocarpium robertianum* still grew on the portal of the canal tunnel. It seemed to be flourishing.

Mendip Hills, Somerset - 27 June. We met at the car park at Stockhill Plantation (31/548514) and walked along the track across North Hill to the site of the old lead works. The *Botrychium lunaria* had flushed in mid May and was nearly over but there were enough plants to show how difficult they are to see even when you are looking straight at them. Along the way we saw *Athyrium filix-femina, Dryopteris carthusiana, D. dilatata* and *D. filix-mas*, all robust but showing the effects of exposure because the ground is very open with no shade, for the only trees are alders invading the edges of the ponds.

In the ruined walls of the refinery (31/543506) we found *Asplenium adiantum-nigrum, A. ceterach, A. ruta-muraria, A. trichomanes* and *Cystopteris fragilis* growing in close proximity. On the way back we noted *Equisetum fluviatile* in the ponds and in the marshy areas by the track. *E. arvense* and bracken were all around but we didn't find any *Ophioglossum vulgatum*. We didn't see any adders either; thankfully they had warmed up and gone underground before we arrived. We moved on to Ebbor Gorge (31/520485), stopping on the way to sample a beverage called Tanglefoot, and ate lunch at the viewpoint looking out over the Somerset levels. Ebbor Gorge is just hard work and the best ferns are on the slope by the car park: *Asplenium scolopendrium, Dryopteris dilatata, D. filix-mas, Polystichum setiferum* and a fine *D. affinis* in a woodland setting. We took the red route and found *A. trichomanes* growing on the rock-faces and a large crested scolly growing on a scree slope where, unfortunately, the trees had been cut down, so its days are numbered.

From Ebbor Gorge we drove to Black Rock in Cheddar Gorge (31/483545). We found *Gymnocarpium robertianum* and *Polystichum aculeatum* by the side of the track near the road so we only walked to the edge of Long Wood noting that despite the wall being rebuilt the *G. robertianum* still survives, scorched and diminished, but hopefully strong enough to recolonise.

Back at the road we parted, some to Bath, some to Burnham to paddle in the sea, whilst I went home with sunburn.

Forest of Dean – 31 July. This meeting had been billed as a contribution to 'Affinis Watch' and my intention was to wander gently up and down Wimberry Slade collecting a few fronds on the way. As it turned out I got more enthusiastic expert support than I expected so we walked Wimberry Slade, Bixhead Slade, climbed into and out of Spion Kop quarry and took a quick look at all the ferny spots round Cannop Ponds. There is a young plant of *Gymnocarpium dryopteris* in an air shaft below the reserve which offers some hope for the colony's survival. The polypodies in Spion Kop are *P. interjectum* and the *Asplenium trichomanes* will need technical confirmation because there appear to be both subsp. *quadrivalens* and *trichomanes* in the quarry.

We did collect some *Dryopteris affinis* fronds on the way. Thanks to Mrs Matthews they arrived safely back at my car.

Forest of Dean – 1 August. We parked on the bed of the old railway line at The Patches and walked across the road to Mallards Pike Lane (32/638092). Although the area is a popular picnic spot few stray far from the barbecues or the forest trail, so we soon had the track to ourselves. Not a lot to be seen: *Equisetum arvense, E. fluviatile* and *E. palustre* growing together in a drainage ditch, *Blechnum spicant, Dryopteris affinis, D. dilatata* and the ever advancing bracken. On the way back, after much searching, we found *D. carthusiana*, only the odd plant here and there, but Dr Hards was able to point out the distinct colour difference between its emerging croziers and those of *D. dilatata*, a good diagnostic feature for the spring.

After lunch we made our way to a disused quarry in Howbeech Slade (32/648091), with *Asplenium scolopendrium, Polystichum aculeatum* and many lime-loving flowering plants surrounded on all sides by conifers on acid soils. We followed the beaten track rather than my not-so-short short cut back to the cars, and went our separate ways.

Wetmoor Reserve, near Wickwar, Avon – 5 September. My wife and I took our usual walk round the Wetmoor Reserve (31/746881), ostensibly to look for *Dryopteris* x *deweveri*. We found plenty of both parents but no unusual plants. We got diverted by the sun and blackberries and ventured far beyond the reserve, the only finds being a number of fine *D. affinis* and a flowering plant (in seed) which we have so far failed to identify.

SOUTH-EAST

Bruges, Belgium – 19 June. Twenty-two members and friends assembled at Dover, fortunately on a fine day, to take the Jetfoil to Ostend for the South-East group's first foray outside the country. Ronnie Viane had arranged coach transport which met us at Ostend and took us the short distance to Bruges. This 'Venice of the North' is a lovely city with many old and beautiful buildings arranged around a system of canals; it was busy with tourists. We walked for an hour or so across the town to our bus waiting on the opposite side.

Ronnie's house was only a short ride away and turned out to be a pteridologist's paradise. In an apparently unpromising situation, Ronnie has created woodland habitats for a large number of species. Of particular interest was his collection of *Dryopteris* species, used with effect to illustrate the interrelationships and evolution of the genus on a worldwide basis. He had prepared not only a list of plants in the garden, but also a plan of these *Dryopteris* evolutionary relationships. Some ferns were very impressive, and our host generously divided for us a fine *Polystichum* hybrid, originally raised by

Anne Sleep.

Over tea and other refreshments we were able to discuss some aspects of Ronnie's work on *Asplenium*. Again he had an interesting collection, mostly in pots.

We were sorry to leave, but time was pressing, and our bus took us direct to Ostend. We were very grateful to Ronnie, not only for showing us his fascinating garden and for arranging transport, but also for having the stroke of genius to fit in an unforgettable visit to the beautiful city of Bruges.

Paul Ripley

Denge Marshes, Winchelsea and Hastings - 17 July. Split starting venues caused by the RSPB allowing only ten of us onto the Denge Marshes in Kent made for an interesting morning. Most members opted to meet at Denge Marshes to look at *Thelypteris palustris* in the boggy areas whilst a handful looked around Winchelsea Abbey in East Sussex. After re-establishing contact the two groups examined a wall opposite the abbey where there was a colony of *Asplenium ceterach* and *Polypodium cambricum*.

A short walk away on the ruins of Greyfriars Abbey, out of reach of the most intrepid pteridologist, was an enormous expanse of *P. cambricum* which had been indicted for damaging the wall. An experiment in removing a patch had revealed the hybrid *P.* x *font-queri* but this could only be seen with binoculars. Our verdict was that *P. cambricum* actually helped to hold the walls together.

After a pleasant lunch we journeyed on to Ecclesbourne Glen close to Hastings. A short walk northwards up the glen revealed *Oreopteris limbosperma*. Going down the glen into the wooded area we were able to help newer members identify the more common ferns. In damp holes and ledges in the sandstone we eventually found gametophytes of *Trichomanes speciosum*. Further down we saw *Equisetum telmateia* colonising the crumbling mud cliffs.

We then retired to Steve and Karen Munyard's home in Hastings for tea. And what a sumptuous spread we were provided with. Their home was a veritable pteridologists' paradise. One room was full of fern books and county floras. BPS Book Sales occupied an enormous bookcase in another room. Ferns of all types were resplendent throughout the house. The garden and greenhouses had further magnificent ferns, and I probably should not mention this but below the garden in some damp allotments was the most wonderful stand of *Equisetum palustre*!

We had to tear ourselves away as we had booked a 7 o'clock appointment at Ashburnham Place, west of Battle, to see the finest colony of *Adiantum capillus-veneris* I have seen in Britain. It seemed to have found the ideal niche near the base of a limestone wall. *Asplenium adiantum-nigrum, A. ruta-muraria* and *A. trichomanes* also shared the upper parts of the wall. Thanks to Steve and Karen for a really super day and a magnificent tea.

Pat Acock

Sheffield Park, East Sussex - 25 September. A record number of 32 members and friends met to visit this large and beautiful National Trust garden. The garden was originally planned by Capability Brown, but was subsequently extended and extensively reworked early this century. The gardens are famed for the richness of their autumn colour, just beginning at the time of our visit. It is a tribute to the hard work of the staff of the gardens that the devastation caused by the 1987 'hurricane' was scarcely apparent.

Before our visit to the gardens, some of us met for lunch at Sheffield Park station on the Bluebell Line and indulged in a little nostalgia for the age of steam.

Once in the gardens, we walked first by the 'Stream Walk', where large groups of *Matteuccia struthiopteris* had been planted, together with *Blechnum chilense* and *Onoclea sensibilis*. All these ferns were showing autumn colour and set off the surrounding plants most harmoniously. Also in this area, self-sown *Dryopteris dilatata, D. filix-mas* and *D. affinis* morphotype *affinis* were at home.

Walking the 'Queen's Walk' we came to a wilder area at the head of one of the lakes. Here we found *Blechnum spicant, Athyrium filix-femina* and *D. affinis* morphotype *borreri* in addition to species previously seen. The *'borreri'* showed some tendency to the *'robusta'* luxuriation of the pinnules. Nearer the upper lakes some magnificent specimens of *Osmunda regalis* had been planted but many more had 'seeded' themselves on the rocks, together with *Asplenium scolopendrium*.

It was great to have so many members on a meeting, and we were pleased to welcome some new faces.

Paul Ripley

Wisley and Abinger Bottom, Surrey – 30 October. Another bumper turn-out of over 30 people met at the Royal Horticultural Society's gardens at Wisley, Surrey. We had the benefit of Peter Barnes' knowledge of the gardens, and we saw the four ferny areas in the gardens. First a quick tour of the greenhouses, where dicksonias were well in evidence and some magnificent and fertile *Platycerium* plants were enjoying the environment. We then saw a border planted entirely with ferns. Some colourful polypodies caught our eye, and here and in the 'wild garden' there was some debate over the *Dryopteris filix-mas* aggregate 'Pinderi'/'Stableri'/'Barnesii' complex. The plants at Wisley are one of the first two. There were also some fine *Polypodium cambricum* colonies. Between the greenhouses and the entrance is an area now replanted following devastation by the 'hurricane' of 1987. Experiments with hardiness of a number of species are being carried out here. In particular, *Dicksonia antarctica* and, elsewhere, *Paesia scaberula, Diplazium* sp. and *Cheilanthes lanosa* appeared to be thriving. It will be interesting to see how these species cope with a more severe winter than the last one. An interesting addition to this collection was the epiphytic *Lepisorus thunbergianus*, 'planted' on the bark of pine trees and on a *Dicksonia*. In the wild garden were the ferns moved from the former fern dell, also destroyed in the gales. Some ferns had regrettably been lost, *Dryopteris cristata* for instance, and the *Asplenium scolopendrium* plants were rather poor, but *Polystichum setiferum* 'Plumosum Bevis' and *Polypodium* varieties were looking fine.

A problem with meetings at this time of the year is that there is not enough daylight to do justice to people's gardens, and our visit to Lesley Williams and Graham Ackers' home at Abinger Bottom was no exception. Their garden is situated in an idyllic spot on the slopes of Leith Hill, with rivulets all round. There were plenty of interesting and well grown ferns to be seen. A *Blechnum chilense* with two foot long fertile fronds, a *Cheilanthes* happily growing on a sunny paved area, *Adiantum pedatum* growing in a wall above a pond, *Polystichum proliferum* (one of the parents of the hybrid produced by Anne Sleep and grown by Ronnie Viane) and a fine *Asplenium onopteris* indoors all caught my eye.

We were able to peruse Graham's extensive library while eating a delicious tea kindly prepared by Lesley. Jennifer Ide then showed some fascinating slides of vessels made from tree-ferns, Graham some views of Madeira (the Society must go there!) and David Jacobs of ferns both from his recent travels in Nevis and from the Azores. Andrew Leonard's slides drew the day to a close; he had just returned from north Portugal, where it rained, apparently.

Very many thanks are due to Graham and Lesley for organising a well-planned and thoroughly enjoyable day.

Paul Ripley

EAST ANGLIA

Margaret Nimmo-Smith

Cambridge - Friday 26 May. The season started unofficially with a display about ferns mounted by Sarah Finney and myself at the annual Natural History Conversazione held in Cambridge. This one day event is visited by hundreds of school-children (including the whole infant school my youngest daughter attends!) and many other people, both academics and interested amateurs. Sarah masterminded the display using the BPS boards, hardy and tender ferns and other fern paraphernalia. The stand caused a great deal of interest; we recruited one new member and were interviewed by Radio Cambridge for a whole programme devoted to the Conversazione. Many thanks to Sarah for her idea and for putting it into practice.

Ely Cathedral - Saturday 19 June. Barrie Stevenson and I were the only members who turned out to conduct a pteridophyte survey of the precincts of Ely Cathedral, a task we had been asked to do as part of a general fauna and flora survey. Despite scrutinising yards of ancient wall, peering into back gardens, tramping across the park and clambering up the old motte, only three tiny ferns were to be found: two small *Dryopteris filix-mas* on walls and what appeared to be *Asplenium adiantum-nigrum* down a deep grating. Unfortunately, too many once suitable walls had been repointed. In the afternoon we paid a visit to Sarah Finney's garden in Sutton. Although small, this garden had everything beautifully planned and was planted with interesting ferns. Fern chat was enjoyed over welcome tea.

Hertfordshire - Saturday 7 August. Seventeen members and friends gathered at David Bannister's wholesale fern nursery at Royston in Hertfordshire. We were welcomed with coffee before touring the nursery and seeing a few of David's growing techniques. All his ferns are grown from spores. He does *Pteris* varieties for the pot-plant trade but his main interest is in the 30 or more varieties of hardy ferns which he raises and sells to garden centres and other nurseries. We also had the privilege of seeing the ferns in his garden including some good varieties of *Polystichum* and *Dryopteris*.

After a pub lunch we drove down to Brent Pelham, to visit Sylvia Martinelli and David Hazelgrove, both keen Alpine Garden Society members, who have created a fast-maturing garden from a large open field site in just six years. It is planned with contrasts: formal beds of roses and herbaceous plants and large areas with fine specimen trees, many rare and unusual varieties. Ferns were to be found in a more shaded shrubby area with other woodland plants. A new fern bed had been planted near the house in a north-facing area, and the pond bank had *Osmunda* thriving. The alpine house had large plants of *Pellaea* and *Cheilanthes* enjoying the annual summer baking. Sylvia, a new recruit to the BPS, has plans for a new shade-house for ferns as soon as a suitable site can be agreed. It seemed that there would soon be many more suitable habitats for ferns, as the trees were maturing rapidly to create a more woodland effect. Tea and chat on the terrace were welcomed by all.

Suffolk - Saturday 4 September. Eleven members gathered at Great Bradfield woods in Suffolk (52/935581), owned by the Suffolk Wildlife Trust. This mixed woodland is managed by coppice rotation; however, the site near the centre of the wood which we explored first had not been coppiced for a long time. Here we found *Dryopteris filix-mas, D. dilatata,* a few plants of *Athyrium filix-femina, D. carthusiana* in quantity, a solitary plant of *Asplenium scolopendrium* and several plants of *Dryopteris affinis,* probably morphotype *borreri.* This area proved so rewarding that we penetrated further into the wood and on regaining the track we returned in a different place so that our leader mistook the way back! After deciding on the correct location, the party divided to return by two different routes. More *Dryopteris* were seen, as was *Pteridium aquilinum.* It was also most interesting to find *Daphne mezereum.* Time did not permit further exploration, but it was generally agreed that the Group should return another year to explore the wood more fully.

photo: A.R. Busby

East Anglian Group at Rod Leeds' garden

Margaret Nimmo-Smith, Barrie Stevenson, Geoffrey & Marie Winder,
Rod Leeds, Linda & Trisha Craddock, Alf Hoare, Bunny Goldberg, Mick Craddock

After a pub lunch in Lavenham, we visited Rod Leeds' garden at Preston St. Mary. He is another keen AGS member who has recently joined the BPS. His garden, of about half an acre, is absolutely packed with treasures of all kinds with many plants still in flower including cyclamen, colchicums and clematis. Ferns were to be found throughout the garden. A fine clump of *Onychium japonicum* was doing well and the varieties of scollies and polypodies were admired. After refreshments we departed for Barrie Stevenson's garden at Cowlinge. Barrie's interest in ferns grew from his passion for Victoriana, which was much in evidence while we consumed a magnificent tea. A tour of his small garden revealed several areas devoted to ferns, including one corner entirely filled with his sporelings. He has made suitable fern areas by digging out paths to make banks. Members departed with bagfuls of excess sporelings. Unfortunately time didn't allow most of us the chance to peruse his fern book collection but we hope there will be another opportunity.

Cambridge University Botanic Garden - Sunday 3 October. We staged another display stand for the BPS at the Societies Fair organised for the second year by the Friends of Cambridge University Botanic Garden. The public showed much interest in the display, fern sales were brisk and new members recruited. Special thanks go to Matt Busby for his assistance and to David Bannister and Barrie Stevenson for donating ferns.

The last meeting of the East Anglian Group will be a social afternoon at my house in Cambridge with slides and fern chat on Sunday 14 November. I would like to thank all the members and their partners who opened their gardens this year for welcoming and refreshing us.

NORTH-WEST

Marjorie Garstang

Holehird, Windermere - 2 October. Seventeen members and friends met at Holehird to discuss the forming of a Regional Group in the Lake District area. We were very pleased to have President Jack Bouckley with us, who began the meeting by explaining the aims, purposes and benefits of the Regional Groups and gave some invaluable advice on their running and self-financing. The members present then took the decision to form a Group and addressed the choice of a suitable title. In the discussion which followed, several points emerged which led to the eventual rejection of both 'Cumbria' and 'Lake District', leaving 'North-West' as the expansive and bold final choice. Volunteers for a varied programme for 1994 were soon obtained, the 'North-West' having seemingly endless possibilities.

A break from such momentous decision taking was made for a walk around the gardens of Holehird, and a tour of the National Collection of *Polystichum* held there. Tea and refreshments followed, with an opportunity to chat and look at herbarium specimens and records kept by Cynthia Kelsall and some early Victorian photographic plates of the Bolton collection, brought in by Malcolm Hutcheson.

The Group will meet again in November when Dr Geoffrey Halliday will give a lecture on 'The Distribution of Ferns in Cumbria'.

We hope to have a North-West programme ready early in 1994 and can assure any member within travelling distance of the area, or perhaps on holiday here, a very warm welcome at any of the events.

We would like to express our thanks to Jack and Ruth Bouckley for making the journey from Harrogate in order to advise and support us in this first step, and also to Cynthia Kelsall and the Lakeland Horticultural Society for providing such an ideal venue.

SOUTHPORT FLOWER SHOW – 19-21 August

A.R. Busby

I am pleased to report an extremely successful show with a remarkable increase in entries in the fern classes, twice as many as in 1992. After the poor number of entries in recent years this is very encouraging.

The 1993 show was the first of a series to have a theme under the title 'Gardening through the Ages'; this year the theme was Victorian. I decided to set up the Society stand to reflect this, with a display showing the 'Victorians and their Ferns'. Examples of period fern books, microscopes and Victorian furnishings were exhibited, with the centre-piece being a 3 x 2 foot replica glazed case, built for me by member Andrew Kyte.

Being the only society stand that had attempted to respond to the show's theme, we were confident that we were in with a chance to win the 'David Knowles' trophy which is awarded to the best Society stand each year. However, in the event the National Carnation Society stand won the award. Once again 'colour' was set above 'form'. Next year the theme will be the 'Middle Ages' but I shall resume our usual display of literature and plants.

Once again, A.R. Busby and R.L. Godard-Key were the judges. The prize winners are listed below.

Class 6	Individual Championship: Four hardy ferns, two greenhouse ferns, two foreign hardy ferns: 1st Mrs A.G. Beenham, 2nd Mrs E.A. Gibbs, 3rd R.J. Smith (5 entries)
Class 7	Three Hardy British Ferns (dissimilar): 1st not awarded, 2nd R.J. Smith (3 entries)
Class 8	Three Foreign Hardy Ferns: 1st Mrs A.G. Beenham, 2nd B. Russ, 3rd Mrs E.A. Gibbs (4 entries)
Class 9	Three *Polypodium* (distinct varieties): 1st J.H. Bouckley, 2nd Mrs E.A. Gibbs (2 entries)
Class 10	Three *Polystichum* (distinct varieties): 1st J.H. Bouckley, 2nd Mrs E.A. Gibbs, 3rd I. Rawson (3 entries)
Class 11	Three *Athyrium* (distinct varieties): 1st J.H. Bouckley, 2nd Mrs E.A. Gibbs (2 entries)
Class 12	Three *Asplenium* (excluding *A. scolopendrium):* 1st B. Russ, 2nd R.J. Smith, 3rd Mrs E.A. Gibbs (3 entries)
Class 13	One British Fern (any kind or variety): 1st Mrs A.G. Beenham, 2nd I. Rawson, 3rd B. Russ (7 entries)
Class 14	One Greenhouse Fern: 1st Mrs O. Fairclough, 2nd R.J. Smith, 3rd Mr & Mrs T. Melling (7 entries)

The 'Happiland' Trophy awarded to the exhibitor gaining the most points in the fern classes was won by Mrs E.A. Gibbs.

My thanks to Jack Bouckley and Ray Smith for assisting me on the Society stand and to Margaret and John Collins for providing transport to and from the show. I always welcome any enquiries about exhibiting ferns at the Southport Flower Show and will advise on the identification, growing and presentation of the exhibits.

BRITISH
AND

photo: courtesy E.A. Gibbs

Southport Flower Show

Libby Gibbs, winner of the BPS Happiland Trophy, with Ray Smith, Matt Busby & Jack Bouckley

INTERNATIONAL ASSOCIATION OF PTERIDOLOGISTS

The IAP (International Association of Pteridologists) was founded in 1981 and is open to all those interested in pteridology.

It aims to:
- link pteridologists worldwide,
- coordinate and advance all aspects of pteridological research,
- promote communication and cooperation.

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a) *iap news*	US$ 0
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Send subscriptions in US$ with your name and address to: Dean P. Whittier, Department of Biology, Box 1565 B, Vanderbilt University, Nashville, TN 37235, USA.

OBITUARY

DR ANNE SLEEP 1939 - 1993

It is with sadness that we record the death of Dr Anne Sleep on 22nd June 1993. She had been afflicted with systemic sclerosis for over twenty years, but throughout this time, despite deteriorating health, she showed enormous courage and determination, and always pursued her fern research with great enthusiasm.

Anne was born at Catford, London, on 25th February 1939, the only child of Ivy Eleanor Sleep (née Hatcher) and the late B.H. Sleep, of Eden Park, Kent. She attended St Saviour's and St Olave's Grammar School for Girls in London, and went on to take an Honours Degree in Botany at the University of Exeter. In 1961 she moved to the Department of Botany at the University of Leeds to become a research student of Professor Irene Manton. This was during the 'Golden Era' of fern cytology at Leeds when the department was full of fern students, postdoctoral researchers and visiting fellows, and the experimental gardens, in the capable hands of Mr Peter Lee, housed thousands of clay pots of prothalli and sporophytes, usually plunged in cinders. When Anne arrived at Leeds Drs Stanley, Molly (née Shivas) and Trevor Walker had already moved on, but her contemporaries at that time included Dr John Lovis and fellow students Janet Souter

photo: courtesy I. Moxon

(née Emmott) and Tony Braithwaite. Anne's area of research was in two genera, *Asplenium* and *Polystichum*, employing the methods of experimental hybridisation and subsequent meiotic analysis to investigate the relationships between diploid taxa, and the evolution of polyploids.

In 1961 Anne joined the British Pteridological Society, and was a very active participant in the field meetings; neither pouring rain nor precipitous crags could deter her from fern hunting. *Polystichum*, of course, was a high priority on these meetings when Anne searched for hybrids amongst the three British species. She was able to show not only that *P.* x *bicknellii* is fairly widely distributed in Britain *(Br. Fern Gaz.* **10**: 208-209), but also discovered both *P.* x *illyricum (Br. Fern Gaz.* **10**: 281-282) and later *P.* x *lonchitiforme* in Ireland.

Anne's thesis on 'Some cytotaxonomic problems in the fern genera *Asplenium* and *Polystichum'* was presented in 1966. She was then awarded a research fellowship to spend two years in Japan from 1967 to 1969, pursuing her work on ferns. This visit was of major significance in Anne's life; not only did she return with a wealth of exciting fern collections but she also fell in love with the country, its people and its culture. She gave talks to the Society on Japanese ferns and 'An introduction to the ferns of Japan' was published in the *Gazette* (**10**: 127-141).

An exciting new hybrid was discovered by Anne in Guernsey during the BPS field trip in 1971, *Asplenium* x *sarniense*, the hybrid of *A. adiantum-nigrum* x *A. obovatum* subsp. *lanceolatum (Br. Fern Gaz.* **10**: 209-211). This hybrid proved to be particularly interesting; she returned to Guernsey to collect further material of this hybrid and the parents in 1990, and she was still making experiments with this material when she died.

Following her return from Japan, Anne developed systemic sclerosis, a rare and debilitating disease that proved difficult to diagnose and treat. During later years she was particularly susceptible to bronchitis, and was restricted in her movements so that her practical fern work proved more and more difficult.

However, her mind stayed as sharp as ever, and she continued to expand her research programme to include, for example, Japanese *Polystichum* species and a detailed cytological and ecological study of serpentine forms of *Asplenium adiantum-nigrum*. She worked closely for many years with Professor Reichstein, and collaborated with Dr You-xing Lin from Beijing and Dr Paloma Cubas from Madrid. However, her last public lecture in 1992 was on the subject of systemic sclerosis, to an audience from the medical profession.

Sadly the sclerosis began to affect her heart, and she died during the early hours of 22nd June of bronchial pneumonia, pulmonary hypertension and systemic sclerosis. The funeral service was on 25th June at the University Chaplaincy, and she was interred at St John the Baptist Church, Adel, Leeds.

Not only have we lost a good scientist and enthusiastic pteridologist, but with Anne's death the research on ferns at Leeds, that began in 1946, has come to an end. Anne's herbarium, spore and slide collection are now housed at the Natural History Museum, London (BM). We offer our deepest sympathy to her mother, and to Mr Ian Moxon, a devoted friend for more than twenty years.

Mary Gibby

MEMBERSHIP LIST: ADDITIONS AND AMENDMENTS

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ALTMAN, Mr B.R.R., Lubeckstraat 116, Den Haag 2517 ST, Netherlands
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THE AMERICAN FERN SOCIETY INC.

The AFS wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum,* the scientific quarterly *American Fern Journal.* Membership costs $11.00 and $20.00 per annum, respectively, including overseas postage ($14.00 and $31.00 if airmail postage required). For particulars please write to Dr Richard L. Hauke, 456 McGill Place, Atlanta, Georgia 30312 USA. Prospective members residing in Great Britain should write to Miss A.M. Paul, Dept. of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD.

GROW GREAT FERNS

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MEETINGS 1994

Meetings Secretary: A.C. Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P.J. Acock, N.J Hards, J.M. Ide, A.C. Pigott, P.H. Ripley

Sat 5 March – **Spring Indoor Meeting – Coventry**
Location: Warwick University, Department of Science Education, Canley, Coventry CV4 7AL
Leader: Matt Busby Time: 11.00

Fri 6 - Sun 8 May – **Malvern Spring Show: BPS Stand**
Location: The Three Counties Showground, Malvern, Worcs. WR13 6NW
Further Info: Matt Busby

Sat 28 May – **Day Indoor Meeting – Kew**
Location: Royal Botanic Gardens, Kew, Surrey
Leader: Peter Edwards Time: 11.00

Wed eve 22 - Tues 28 June – **Week Field & Gardens Meeting – Cornwall**
Leader: Jennifer Ide
Centre: Trevispian-Vean Farm Guest House, St. Erme, Truro TR4 9BL
Times: 19.30 Wednesday eve, 09.30 following mornings

Thurs 28 - Sun 31 July – **Long Weekend Indoor/Field Meeting – Edinburgh, Scotland**
Leader: Stuart Lindsay
Centre: Royal Botanic Garden, Edinburgh
Times: 09.30 each morning

Fri eve 12 - Fri 19 August – **Week Field Meeting – South-West Ireland**
Leader: Clive Jermy
See full programme for details

Thurs 18 - Sat 20 August – **Southport Flower Show: BPS Stand**
Further Info: Matt Busby

Thurs eve 8 - Sun 11 Sept – **Long Weekend Field Meeting – Yorkshire**
Leader: Jack Bouckley
Centre: Saxon House Hotel, Fishergate, 71-73 Fulford Road, York YO1 4BD
Times: 19.30 Thursday eve, 09.30 following mornings

Sat 15 October – **Annual General Meeting & Autumn Indoor Meeting – London**
Location: Botany Dept., Natural History Museum, Cromwell Road, London SW7 5BD
Leader: Alison Paul Time: 11.00

For full details of these meetings, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

REGIONAL MEETINGS

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Wessex	J.E. Jarvis, Vermont, Jubilee Road, Nailsworth, Stroud, Gloucs. GL6 0NG
Midlands	A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD
Leeds & District	J.H. Bouckley, 209 Woodfield Road, Harrogate, Yorks. HG1 4JE
South-East England	P.H. Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia	Mrs M.E. Nimmo-Smith, 201 Chesterton Road, Cambridge CB4 1AH
North-West England	Mrs M. Garstang, Overbeck, Pennybridge, Ulverston, Cumbria LA12 7RQ

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Please send stamped addressed envelope for list

1994 SOUTHPORT FLOWER SHOW
The organisers extend all good wishes for a successful 1994
Classes for your Society's special interests are available
18th, 19th, 20th AUGUST 1994
Schedules and further information from:
The Flower Show Secretary
44 Hoghton Street, Southport, Merseyside PR9 0PQ

The British Pteridological Society
BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 4 NUMBER 5

1994

Edited by A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY
Officers and Committee from October 1994

President: Dr T.G. Walker
President Emeritus: J.W. Dyce, MBE

Vice-Presidents: J.H. Bouckley, J.A. Crabbe, Dr C.N. Page, M.H. Rickard, J.R. Woodhams

Honorary General Secretary and Archivist: A.R. Busby, 'Croziers',
16 Kirby Corner Road, Canley, Coventry, CV4 8GD
(Tel: 01203 715690, Fax: 01203 523237, Email: seaab@csv.warwick.ac.uk)

Membership Secretary and *Editor of the Bulletin:* Miss A.M. Paul,
Department of Botany, The Natural History Museum,
Cromwell Road, London, SW7 5BD

Treasurer: Dr N.J. Hards,
184 Abingdon Road, Didcot, Oxon, OX11 9BP

Meetings Secretary: A.C. Pigott,
43 Molewood Road, Hertford, Herts., SG14 3AQ

Editors of the Fern Gazette: Dr B.A. Thomas, J.A. Crabbe & Dr M. Gibby
Send copy to Dr B.A. Thomas, Department of Botany,
National Museum of Wales, Cathays Park, Cardiff, CF1 3NP

Editor of the Pteridologist: J.W. Merryweather, Biology Department,
University of York, Heslington, York, YO1 5DD
assisted by J.W. Dyce & M.H. Rickard

Committee: R.G. Ackers, R. Cooke, Miss J.M. Ide, A.C. Jermy, A.M. Leonard, Miss H.S. McHaffie, S.J. Munyard, P.H. Ripley, N.R. Schroder, G. Stark

Conservation Officer: R. Cooke,
26 Lancaster Street, Lewes, East Sussex, BN7 2PY

Spore Exchange Organiser: Mrs M.E. Nimmo-Smith,
201 Chesterton Road, Cambridge, CB4 1AH

Plant Exchange Organisers: R.J. & Mrs B. Smith,
184 Solihull Road, Shirley, Solihull, Warwicks., B90 3LG

Booksales Organiser: S.J. Munyard, 234 Harold Road, Hastings, East Sussex, TN35 5NG

Trustees of Greenfield and Centenary Funds: Dr T.G . Walker, A.R. Busby, Dr N.J. Hards

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin*, are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist*, topics of more general appeal, and the *Bulletin*, Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £15, Personal Members not receiving the *Fern Gazette* £12; Student Members £9; Subscribing Institutions £25. Family membership in any category is an additional £2. Applications for membership should be sent to the Membership Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £5 extra to cover bank conversion charges.) Airmail postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: *Woodsia alpina* (Bolton) S.F. Gray, one of Scotland's rare ferns. Illustration from E. Newman (1854) *A History of British Ferns.*)

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 4 1994 No. 5

SECRETARIAL NOTES

ANNUAL GENERAL MEETING 1995, PRELIMINARY NOTICE – The 92nd AGM will take place on Saturday 7 October 1995 at the Royal Botanic Gardens, Kew, Richmond, Surrey at 2.00 p.m.

COMMITTEE VACANCIES – In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1995. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 9 September 1995.

SUBSCRIPTIONS 1995 – Members are reminded that subscriptions for 1995 are due on the 1st January 1995 and should be paid to the Membership Secretary, British Pteridological Society, c/o Dept. of Botany, The Natural History Museum, Cromwell Road, London, SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL – Our journals can be sent by airmail to overseas members, provided they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY – Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. There is one transferable ticket available for all RHS Shows other than the Chelsea Flower Show. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLES – The Society operates a reading circle for several journals. The *American Fern Journal* is a quarterly publication containing much information for those seriously interested in ferns; it is accompanied by the *Fiddlehead Forum,* which publishes many 'ferny' items of interest to the amateur grower. The Royal Horticultural Society's journal, *The Garden,* is published monthly. To receive any of these journals apply to the General Secretary.

THE GREENFIELD FUND – This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society's publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

THE CENTENARY FUND – This fund will be used to promote the study of all aspects of pteridophytes – horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to avail themselves of this fund should contact the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS – Back numbers of the Society's journals are available to members at reasonable prices. Many of the older journals are running out and are best obtained while stocks last. Patrick is able to offer the *Bulletin* vol. 2 minus part 2 for £4 including postage as a special offer this year. A full list is available from Pat Acock, 13 Star Lane, St Mary Cray, Kent BR5 3LJ.

SPECIALIST INTEREST GROUPS – The Committee has agreed to the formation of Specialist Interest Groups. Three groups are planned: Aquatic Pteridophyta, Tree-ferns and Foreign Hardy Ferns. For further information please send a stamped addressed envelope to the organisers:
Aquatic Pteridophyta: Miss J.M. Ide, 42 Crown Woods Way, Eltham, London SE9 2NN.
Tree-ferns: M.H. Rickard, Kyre Park, Tenbury Wells, Worcs. WR15 8RP.
Foreign Hardy Ferns: A.R. (Matt) Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.

VACANCY FOR HONORARY TREASURER – At the 1994 Annual General Meeting, the Hon. Treasurer announced his intention to retire from this post. If any member would care to consider taking over the reigns from Nick Hards, would they kindly contact the Hon. General Secretary as soon as possible. Please write to or phone Matt Busby or Nick Hards for an informal chat about the Treasurer's duties.

BPS VIDEO 'BRITISH FERNS' – With over fifty species of ferns the British Isles has a remarkably varied fern flora. Many species have distinctive distributions reflecting regional variations in environmental conditions. In particular the cool relatively damp environments of the North and the mild Western fringes of Britain bring together species typical of Atlantic, Arctic and Alpine regions, resulting in a fern flora that is unique to the British Isles.

This twenty-five minute video shows most of our native ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

The video was funded by Schering Agriculture and the National Museum of Wales. It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

MEMBERS INFORMATION SERVICE – It is often the case that members require information and advice on many aspects of their interest in Pteridophytes but are often reluctant or simply do not know where to obtain it. Queries from members on any aspects of the biology, identification or cultivation of ferns or fern allies should be sent to the Hon. Gen. Sec. accompanied by three first class stamps.

ANNUAL GENERAL MEETING 1994

MINUTES of the 91st ANNUAL GENERAL MEETING held at The Natural History Museum, Cromwell Road, London on Saturday 15th October 1994 at 2.15 p.m.

IN THE CHAIR: M.H. Rickard, Vice-President.

PRESENT: R.G. Ackers, P.J. Acock, E.J. & R. Baker, A.R. Busby, J.M. Camus, R. Cooke, H.V. Corley, J.A. Crabbe, M.J., L.I. & T. Craddock, A. Dickman, J. & M. Garstang, M. Gibby, N.J. Hards, D. Hill, G.K. Hoare, K. & D. Holly, J.M. Ide, A.C. & A. Jermy, R. Johns, P. Kear, M.E. Nimmo-Smith, E.O. Mason, H.W. Matthews, J.W. Merryweather, R.J. Murphy, A.M. Paul, H. Peto, A.C. Pigott, H. Rickard, N.R. Schroder, R.J. & B. Smith, G. Stark, R.W. & S. Sykes, B.A. Thomas, R.N. Timm, J.C. Vogel, T.G. Walker, R.M. Walls, M. Williams, J.R. Woodhams.

ITEM 1 – APOLOGIES FOR ABSENCE: J.H. Bouckley, D. Fortune, A.M. Leonard, H. McHaffie, C.N. Page, S.J. Munyard, P.H. Ripley.

ITEM 2 – APPROVAL OF MINUTES: Minutes of the AGM held on 16 October 1993 had been published in the 1993 *Bulletin* and were approved.

ITEM 3 – MATTERS ARISING FROM THESE MINUTES: None. The Secretary explained the absence of the President who was recovering from an operation.

ITEM 4 – HONORARY GENERAL SECRETARY'S REPORT:
MEETINGS: I am pleased to report another busy year, having received good reports of the national meetings which again included a visit to the Continent. I was pleased to be part of excellent meetings in Cornwall, and the BPS/RBGE conference and field meeting in Scotland. The Society visited the Republic of Ireland, a ferny area much neglected in recent years by the BPS. Several of our members visited Italy and were once again able to meet with European pteridologists. It is intended that visits abroad will continue annually.

REGIONAL GROUPS: It is very gratifying to be able to report the formation of another regional group. Barbara Porter has formed a group in the Greater Manchester area and hopes to attract members from Cheshire and the Wirral. The new group has already completed its first year of meetings and is now considering venues and events for next year. We urge members in that area to give them all their support. One interesting idea is to combine a meeting with the North-West group in adjacent areas. This is an idea that other groups could follow to their mutual benefit. We still have areas without regional groups including the far south-west, Scotland and Wales. Anyone prepared to try and organise groups in these areas can be sure of the Committee's fullest support.

MEMBERSHIP: At the time of writing we have welcomed 81 new members to our Society during 1994; set against this is the loss of some 30 members for various reasons. Our Membership Secretary, Alison Paul, informs me that our total membership stands at 770. We continue to make slow progress towards having one thousand members.

PLANT AND SPORE EXCHANGE SCHEMES: Ray and Brenda Smith have picked up the baton very smoothly from Rosemary Hibbs and have now issued their second list which contains some eighty species and forms of ferns offered by nineteen donors. It confirms my opinion that the Plant Exchange is in safe hands. Margaret Nimmo-Smith continues her unstinting hard work with the Spore Exchange Scheme. The current list is the longest we have issued and Margaret has received a record number of requests. A new feature on the sheet was a list of current donors which has proved to be a popular introduction. Margaret is now preparing the list for next year and we can be confident that it will be as interesting as previous years. Each year Margaret seems to find something new to add to the list. You can help by sending in spores from your own ferns now.

SPECIAL INTEREST GROUPS: Following the questionnaire circulated by Margaret Nimmo-Smith, three special areas of interest were identified and after some discussion in Committee it was agreed that special interest groups should be formed to bring together members with these interests in common. A group for those keen on growing and studying aquatic pteridophyta is being formed with Jennifer Ide as leader, a group for tree-fern enthusiasts will be led by Martin Rickard and I am forming a group for those interested in growing foreign hardy ferns. Members keen to take part in any of these groups are urged to contact the respective leaders as soon as possible.

Finally, our retiring President, Jack Bouckley, has recently successfully undergone an operation, but was unable to be with us today. I am sure you will join me in wishing him back to full health very soon.
The Meeting approved and adopted the report and the Vice-President thanked Mr Busby.

ITEM 5 – HONORARY TREASURER'S REPORT: Dr Nick Hards circulated his balance sheet to the meeting. He pointed out that printing and stationery seemed expensive because new letterheads and envelopes had been purchased which would last for several years, and some of the costs of spore and plant exchanges were also included. The grant from the Centenary Fund had been made to Kate Raine from Manchester University to attend a conference in the USA; a brief report was published in *The Pteridologist*. The Publications Account showed a deficit for the year and would need a further injection of capital when the Society published a new booklet. Mr J.W. Dyce, had very kindly made a donation of £250 towards the cost of reprinting his book *The Cultivation and Propagation of British Ferns*.
The adoption of the report was proposed by M. Gibby, seconded by A.C. Jermy, and passed unanimously by the meeting. The Vice-President thanked Dr Hards who then announced to the meeting that although he would continue in office for another year, he would like a replacement to be found for a year's time.

ITEM 6 – HONORARY MEETINGS SECRETARY'S REPORT: Anthony Pigott reported that it had been another successful year, in particular the Edinburgh meeting which had broken new ground with an extremely well organised and well attended conference and field trip, which he felt had enhanced the status of the Society. He hoped that this format would be repeated soon, an idea supported by many pteridologists who welcomed the opportunity to meet and exchange ideas. He continued his report by outlining the programme for 1995.
The meeting adopted the report and he was thanked by the Vice-President.

ITEM 7 – EDITORS' REPORTS: *Fern Gazette* – Barry Thomas reported that the second part for the year had been delayed but was now almost ready. He thanked his co-editors James Crabbe and Mary Gibby who were working on the last paper from Anne Sleep for publication.
Bulletin – Alison Paul apologised for the lateness of the last edition and hoped this year's would appear earlier. She appealed for more photographs.

Pteridologist – James Merryweather said that it was difficult to follow the high standard set by his predecessor, Martin Rickard, but the small changes he had made had been well received. He had been able to save money on the printing costs which he hoped eventually would result in the use of colour. He appealed to members for more articles.

Acceptance of the reports was proposed by N.J. Hards, seconded by R.J. Smith and passed by the meeting. The Vice-President thanked the editors.

ITEM 8 – ELECTION OF OFFICERS AND COMMITTEE:
Election of President: The Chairman expressed the regret felt by all at the meeting that Jack Bouckley had completed his three excellent years as President of the Society and that ill-health had prevented him from chairing the meeting. The Committee recommended Dr T.G. Walker DSc be elected as the next President; he had been a member of the Society since 1960, was an academic pteridologist of international fame and had contributed many articles to the *Gazette*, particularly on *Pteris*, over the years. The meeting gave unanimous approval to Dr Walker's appointment. Dr Walker then took the Chair and thanked the meeting warmly for his election.

Election of Vice-President: The President said it was his great pleasure that his first duty was to recommend that Jack Bouckley be elected as a Vice-President of the Society. The meeting was pleased to approve this appointment.

Honorary Membership: Clive Jermy (seconded by Anthony Pigott and unanimously supported by the Committee) was pleased to propose Hugh Corley for honorary membership of the Society. Mr Jermy said that over the last 25 years Hugh Corley had contributed much to the understanding and research of the British *Dryopteris* complex and its history, and been a source of influence and inspiration to other younger pteridologists. He was particularly pleased to announce this honour at the time of Hugh Corley's 80th birthday. Hugh Corley then thanked the meeting and said he was greatly honoured.

Election of Officers: It was reported by the Secretary that N.J. Hards, A.C. Pigott and A.R. Busby were willing to be re-elected for another year as Hon. Treasurer, Hon. Meetings Secretary and Hon. General Secretary respectively. It was proposed by M.H. Rickard, seconded by M. Gibby, that the three Officers be elected for a further year; this was carried unanimously.

Committee: The two longest serving members due to retire were R.N. Timm and M.E. Nimmo-Smith and he thanked them for their hard work. The two nominees to fill the vacancies were Clive Jermy, proposed by M.H. Rickard, seconded by A.R. Busby and Heather McHaffie proposed by A.C. Jermy, seconded by A.M. Paul. Mr Busby explained that Dorothy Fortune had expressed her wish to stand down from the Committee due to extra personal commitments with her family and difficulties travelling to Committee meetings and consequently the Committee had accepted her decision with much regret. It was proposed by Dr M. Gibby, seconded by A.M. Paul that Andrew Leonard be nominated for this third vacancy. They were elected unanimously. The remaining seven members of the Committee were elected *en bloc*.

Election of Honorary Editors: Dr B.A. Thomas, supported by J.A. Crabbe and Dr M. Gibby, Miss A.M. Paul and J.W. Merryweather were elected to serve as Editors of the *Fern Gazette*, *Bulletin* and *Pteridologist* respectively.

ITEM 9 – ELECTION OF HONORARY AUDITORS: Mr Busby reported that both Mr G. Hoare and Mr R.J. Smith had indicated their willingness to serve for another year and were elected with the thanks of the President.

ITEM 10 – ANY OTHER BUSINESS:
1. BPS Merchandise – Anthony Pigott announced that he would like to relinquish this job and would like another member to volunteer to do it.

2. Restoration of Fernery at Danesbury Park – Anthony Pigott had been asked to advise the head gardener, Anthony Parsons, in the restoration of this fernery which had been the best in the home counties in 1880 but had been derelict for 60 years. He invited other members to help in this project and offered to act as co-ordinator.

3. Conservation – the Secretary announced the recent Committee appointment of Rob Cooke to the new post of Conservation Officer for the Society. Clive Jermy said how important this would be in providing a link with Plantlife and the BSBI, and in giving the BPS a visible profile in conservation. Mary Gibby had attended a plant collections network meeting and described how Graham Pattison of the NCCPG had praised the co-operation between the BPS and the NCCPG. The Secretary also announced that Anthony Worland had resigned from the position of Fern Distribution Recorder, which was now vacant.

As there was no other business the meeting closed at 3.30 p.m.

A.R. Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1993

ORDINARY ACCOUNT

(1992)	**INCOME:**	
11218.30	SUBSCRIPTIONS	£10096.77
409.92	INTEREST	91.84
200.00	BOOKSALES	200.00
–	SPORE EXCHANGE	17.00
497.95	MERCHANDISE	749.42
–	PLANT SALE	266.10
82.23	SUNDRIES	100.00
–	SYMPOSIUM BOOKS	94.00
12408.40	**TOTAL INCOME**	£11615.13
	EXPENSES:	
1788.00	PTERIDOLOGIST	1913.00
2759.00	GAZETTE	2993.00
1719.00	BULLETIN	1787.00
177.00	PRINTING & STATIONERY	997.76
2270.87	ADMINISTRATION & POSTAGE	2271.50
178.25	SUBSCRIPTIONS TO SOCIETIES	29.15
130.04	BANK CHARGES	–
157.00	PLANT & SPORE EXCHANGES	10.00
271.87	MEETINGS	96.00
666.42	MERCHANDISE	408.24
1239.18	OTHER EXPENSES	–
–	CENTENARY SYMPOSIUM	1399.18
11356.63	**TOTAL EXPENSES**	£11904.83

BALANCE FOR 1993	–289.70
BROUGHT FORWARD FROM 1992	4710.04
CARRIED FORWARD AT 31.12.1993	£4420.34

CENTENARY FUND

BROUGHT FORWARD FROM 1992	5230.19
ROYALTIES	1088.23
INTEREST	297.96
GRANT	–300.00
WORLD OF FERNS	–1095.00
CARRIED FORWARD AT 31.12.1993	£5221.38

GREENFIELD FUND

BROUGHT FORWARD FROM 1992	1654.95
INTEREST	96.75
CARRIED FORWARD AT 31.12.1993	£1751.70

PUBLICATIONS ACCOUNT

BROUGHT FORWARD FROM 1992		–890.20
RECEIPTS	– Offprints	145.00
	– Special Publication No. 1	106.00
	– Special Publication No. 2	49.00
	– Special Publication No. 3	415.00
	– Special Publication No. 4	78.00
	– Special Publication No. 5	15.00
	– Donation	250.00
EXPENSES	– Reprint	–1017.00
CARRIED FORWARD AT 31.12.1993		–£849.20

Notes to the Accounts

1. The Society had the following stocks of books at 31 Dec. 1993 (1992 stocks in brackets): *Guide to Hardy Ferns* 46 (60), *Fern Names and their Meanings* 21 (30), *Cultivation and Propagation of British Ferns* 410 (10), *History of British Pteridology* 865 (879), *BPS Extracts & Papers* 466 (459).

2. Interest arises on 31st March on the Centenary and Greenfield Funds. No provision has been made for accrued interest.

3. For the convenience of the officers concerned and the Treasurer, certain officers are issued with advances of expenses. The balances outstanding at 31 Dec. were small and have not been adjusted in the accounts.

4. The accounts reflect the subscriptions actually received in the year. Approximately £1350 is subscriptions received in advance for 1994 but some subscriptions remain outstanding for 1993.

5. The Society's assets include a share in a computer and software at the Natural History Museum cost £1000.

6. BPS Booksales had assets of £3493.21 at 31 Dec. 1993.

7. The Centenary Fund had 200 copies of *A World of Ferns* at 31 Dec. 1993.

RETIRING PRESIDENT'S ADDRESS – Jack Bouckley

(Presented by M.H. Rickard and J.A. Crabbe after the AGM at The Natural History Museum, London)

First of all, may I say how sorry I am that I am unable to be at this meeting, but doctor's orders are doctor's orders.

Secondly, I congratulate Dr Trevor Walker on being elected as the twenty-second President of the Society (including J. Wilson, 1891 to 1892, who was called Chairman) and I give him my best wishes. It is really a pity that I am not at the meeting to shake him by the hand.

I am not a professional botanist so my talk will not be on something like 'Morphological and cytotaxonomic views on aquatic pteridophytes'. Do I hear some sighs of relief? In 1988, Gwladys Tonge gave a very interesting talk about her lovely ferny garden and this

Jack Bouckley
with his wife Ruth

President 1991-1994

photo: courtesy Harrogate Advertiser

year I was more or less all prepared to talk about ferns in their Yorkshire habitats. It was to be a half hour of illustrated delights of the Yorkshire dales, moors and wolds showing many aspects of the county in lots of different moods. Armed with my cameras, a tripod and three rolls of 36 frames I made a concerted effort, travelling many miles to get first class slides of these remarkable plants growing naturally in grykes, woods and streamsides. Eventually these films were sent off for processing and I was expecting 108 slides to come back, but much to my horror none of the films had advanced past frame No. 1. Each film had had the perforated sides destroyed through a fault in the camera so there were no slides to show, so that talk was off.

So what was I to talk about? During the last three years different members have asked me just how the Society is run so let us spend the next few minutes thinking about 'What makes the BPS tick'. In a Society like ours much goes on behind the scenes of which many of our members are totally unaware so I do hope that this brief account will help everyone to appreciate more fully how much is done by these people.

Let us start at the beginning. Someone joins the Society and the application form is sent to our Membership Secretary, Alison Paul, at The Natural History Museum who, with meticulous care, feeds all the relevant information into the computer. Details of the member are sent to Matt Busby, the Society's Honorary General Secretary who sends out a welcome letter to the applicant. Alison also sends details of subs paid to Dr Nick Hards, our Honorary Treasurer who very ably keeps an eye on all the financial side – receiving cash, paying out cash all the year round and just making sure that there is no chance of us going into the red in the forseeable future. There are books to keep and balance and these are checked every year by the auditors – Mr G. Hoare and Mr R.J. Smith. An unenviable but necessary job.

Our new member will eventually receive either two or four journals during the next year, depending on their type of membership – details of which can be seen on the inside cover of the journals. But before these can be sent out they have to be prepared, so botanists, horticulturalists and enthusiasts etc. have to submit copy to the various editors – Alison Paul for the *Bulletin*, James Merryweather for the *Pteridologist* (Martin Rickard edited this for the first ten editions) and Dr Mary Gibby, Dr Barry Thomas and Jim Crabbe for the *Fern Gazette*. The *Gazette* is our technical publication and most of the copy for this comes from professional botanists. The *Pteridologist* contains news and views of topical interest such as growing, general experiences etc. and James is happy to receive any interesting articles for consideration. The *Bulletin* is an account of Society activities for the previous twelve months and also has details of things to come in the next year. Most of the copy for the *Bulletin* is submitted by regional group leaders and leaders of national indoor and outdoor activities. The outline meetings programme is submitted by Anthony Pigott, the Meetings Secretary, and his team. All of the copy submitted is sorted out and eventually, when edited correctly, it goes to the printers.

These publications, which come out at various times during the year have to be put into envelopes, together with any flyers, for example the full meetings programme, the spore exchange list, the booksales list and the plant exchange information. Sometimes there are more than these, so it can be seen that with addressing the envelopes and sticking on the stamps, Pat Acock has quite a task. He also organises the sale of back copies of the Society journals, a task which brings in cash to help finance the Society.

One of the very important activities is the Spore Exchange Scheme organised by Margaret Nimmo-Smith who has to rely on the rest of the membership to supply the spores, hopefully correctly named. After receiving the spores there is a lot of work to do such as preparing the spore list, making certain that spellings are correct, sorting out the material received, packeting the spores and sending them out to the various members who have requested them. I do believe that her husband does rather a lot to help. Please keep the spores rolling in to Margaret.

The Plant Exchange has been taken over by Ray and Brenda Smith from Rosemary Hibbs. Between them they produce a list of available plants, but again, they can only produce a list if members have sent them details of plants they have to spare. There are some real bargains on this year's list.

Another money spinner is the Booksales. This is organised by Steve Munyard and apart from buying and selling books both old and new, he has to sit down and compile a list of publications which are for sale. It is possible to obtain books from our Booksales which are fairly unobtainable otherwise. If you know of any fern books which are for sale by private owners, please let Steve know.

Anthony Pigott has already been mentioned but he is also responsible for another sales department. Everything besides books. There are ties, sweatshirts and car stickers just to mention a few, at very reasonable prices.

During the last few years the number of Regional Groups has increased dramatically. As the Secretary said in his report, there are still a few parts of the country which are not covered by a group, so if you live in one of these areas and would like to form a group please let him know and I am sure that he will give as much help as is possible. Group organisers are asked to arrange local meetings, such as garden visits or field meetings and to send their individual programmes to their members. These are very important activities as they really get members together and they also attract other fern enthusiasts to the Society.

Then there is the elected Committee – a number of committed members who meet at various times and places to sort out the general running of the Society.

Last but far from least is A.R. (Matt) Busby, the Honorary General Secretary. His is the unenviable task of arranging committee meetings, replying to all sorts of enquiries and generally seeing to the well being of the Society. He has held this position since l979. As well as the secretarial work he is also the Society Archivist to whom any items relating to ferns in local papers etc. should be sent. One very important thing which Matt organises every year is the BPS stand at the Southport Flower Show. This really advertises the Society and every year new members are enrolled as a result of chatting to those who man the stand. He also has the responsibility of running the Members Information Service. Send any queries you have relating to ferns etc. to him and he will make certain that it is passed on to the appropriate member of the 'Think tank'. Talking about a think tank, I heard of a man who was being admitted to hospital for a brain transplant and the Consultant said to the patient just prior to the operation "We have two brains available, one from an old Member of Parliament and the other from a young fern buff, which one would you like?" The patient replied "I think I will have the brain from the old MP, it must be unused and as good as new".

I almost forgot to mention the Vice-Presidents J. Crabbe, Dr C. Page, M. Rickard, Mrs G. Tonge & J. Woodhams who have always been available to take on any particular task.

So these are the people who I have had the pleasure of working with during the last three years and I must say here and now – thank you for being such a smashing team.

These three years have seen some quite unique happenings. Jimmy Dyce, our President Emeritus, went to Buckingham Palace to collect his MBE award from the Queen. Clive Jermy became the seventh member to be awarded the Stansfield medal. Reginald Kaye received an Honorary Master of Science degree at Lancaster University. Unfortunately our Reggie has since died. James Russell who many knew at Castle Howard was awarded an honorary degree at York University.

One thing which has happened during the last year is the necessity for members to sign indemnity forms before starting off on Society field meetings. The world's population has become very claim-minded so precautions to protect the Society had to be implemented. But of course the best precaution is never to take unnecessary risks, or as Murphy's law says "Never play leapfrog with a unicorn".

So we have looked into the past. We have thought of the present, but change is the law of life. I repeat, change is the law of life. Those who look only to the past and present are certain to miss the future and we do not contemplate missing the future. I had a letter from America a few days ago in which Judith Jones of Seattle referred to the BPS as the best fern society in the world. We have got to keep it so, we have got to improve, we must expand. Of course there will be pitfalls but J.F. Kennedy once said "Our greatest glory is not in never falling, but in rising every time we fall".

At the beginning of this little talk I said "What makes the BPS tick?" I have not forgotten the total membership, the shows, Kew personel and those behind the scenes at The Natural History Museum and the host of others who all have a part to play in the Society. May we look forward with hope to my 1991 aim of 1,000 members by the turn of the century. I am confident that it can be done.... Are you?

Again I say to Trevor Walker all the very best as he goes forward to lead the Society to even better things.

Thanks to everyone.

[Jack would also like to thank those at the AGM who signed the pressed fern 'card' for him; he will have it suitably framed.]

LECTURE MEETINGS AND DAY VISITS 1994

SPRING INDOOR MEETING – 5 March. In the morning members toured the glasshouses of the Department of Science Education at the University of Warwick (by kind permission of Prof. D. Kelly). In the large tropical greenhouse they saw a range of tropical economic crops and a collection of ferns including *Phlebodium aureum* 'Mexican Tasseled', *Nephrolepis duffii* and an enormous *Platycerium bifurcatum. Ampelopteris prolifera* was growing in the soil as ground cover. The cooler range of glasshouses contained a collection of *Adiantum raddianum* cultivars, *Adiantum formosum*, *Blechnum occidentale*, *Christella dentata* 'Corymbifera' and several doodias. At the cool end of the range, Matt Busby had set out various hardy and near hardy ferns and a display of *Trichomanes speciosum* grown in containers (all material originating from clones in cultivation). Other ferns included *Dicksonia antarctica*, *Pellaea ovata*, *Ceterach aureum* and *Lygodium japonicum*.

During lunch, members were able to see a fascinating display of cheilanthoid fern species staged by Clive Brotherton, a magnificent testimony to his skill as a grower, and were also able to buy plants from Rickards Hardy Ferns.

After lunch, Martin Rickard gave an interesting slide tour of Irish and British fern gardens, in particular illustrating tree-ferns. He included many shots of Cornish gardens which whetted appetites for the meeting to be held later in Cornwall. The most amazing picture was of Martin packing his first large tree-fern with 10 to 12 foot fronds, purchased in Ireland, into an estate car!

This was followed by an illustrated talk by Andrew Leonard who has now been fern hunting several times to Madeira. He showed slides of *Trichomanes speciosum*, so rare in Britain, growing in carpets, *Adiantum reniforme* as a wall fern, and even the rare endemic *Polystichum drepanum*, amongst many other ferns which grow so plentifully on this beautiful island. The water channels used for irrigation, called levadas, provide suitable man-made habitats for ferns. He hopes to persuade the BPS to hold a field trip there and it seems that his hope may be realised in 1995.

Finally Matt Busby demonstrated how to propagate *Asplenium scolopendrium* by means of frond bases. He used a large plant on which to demonstrate and also showed successful propagules from last year. The method will be published in the next *Pteridologist*.

Thanks go to Brenda Smith, Margaret Busby, Margaret Collins and Doreen Brotherton for providing delicious refreshments and to Matt Busby and the Department of Science Education for their hospitality.

M.E. Nimmo-Smith

KEW GARDENS – 28 May. We saw Peter Edwards peeping out from behind the foliage. We saw Peter Edwards travelling up river in a bark canoe. We saw Peter Edwards wearing silly hats. But all the week before poor Peter had been laid up in bed sick and didn't see anything of us.

Our thanks to John Woodhams for stepping in at the last moment and entertaining us with slides and a talk. As always after a Kew meeting I was left dreaming of exotic far-away places, and of how next weekend I was going to convert 12 square feet of back garden into a tropical paradise. John's talk described the adventures of himself, Peter Edwards, Ken Burras and John Warrington during a 1978 expedition to collect ferns and insectivorous plants from the Mount Roraima region of Amazonia.

Following on from John's talk the group joined Peter Bradley for a guided tour of the filmy fern house and then the Princess of Wales Conservatory. Peter has the right idea when it comes to planting, using the garish flowering plants to show off the more sophisticated ferns. Regular Kew visitors were delighted with the extensive replanting of the filmy fern house. A far cry from the days when one had to peer through steamy glass (Patrick is old enough to tell me).

Thanks to the 40 members who attended this year's Kew meeting and got quietly on with their own thing in Peter's absence that morning.

Gavin Stark

AUTUMN INDOOR MEETING, LONDON – 15 October. Around 50 members travelled from all over the country to attend this meeting held in the Department of Botany at The Natural History Museum. A variety of speakers addressed the assembly on the common theme of fern distribution and recording.

Commencing in the Cryptogamic Herbarium, Josephine Camus gave an entertaining insight into her work at the Museum in a talk entitled 'Out of the Forest, into the Herbarium'. She carries out most of her field work in Indonesia and Malaysia where the tropical climate presents problems with drying fronds; this can be overcome by pouring alcohol on bundles of specimens in plastic bags prior to dispatch. Back at the Museum, the fronds are unpacked, dried, pressed and mounted on herbarium sheets, while information is transferred from soggy notebooks to a computer. There are two main aspects to her work: monographic (studying a family or genus) and floristic (studying the plants of a geographic area). One of her projects uses WORLDMAP program to plot data onto a map squared on a grid system. Demonstrating the program on a computer screen, she revealed how entering 200 years of specimens can show only which areas were visited and collected in, rather than full distributions. Some uses of the program are in showing the numbers of species in areas, or areas with endemics, or which taxa have been entered for any part of the world and where they are. It could also be used in a predictive manner to gauge what is likely to be in a particular area.

Next Sean O'Gaoithin, lately of Glasnevin Botanic Garden and currently working at Chelsea Physic Garden, gave a presentation of slides showing an area of woodland in Donegal where he has rediscovered a site from the 19th century of *Trichomanes speciosum*.

Returning to the Department of Botany's common room, we broke for lunch, after which Clive Jermy talked on the history of recording plants in Britain. The first records were those of John Ray in 1724. No binomial system existed then, but Ray's descriptions in Latin clearly identify the species. Dawson Turner and Dillon produced the *Botanist's Guide*, the first county-by-county guide, culled from various published lists. Between 1847-1859 H.C. Watson wrote the four-volume classic *Cybele Britannica* in some considerable detail; he was starting to look at the ecology of the plants. This work introduced the now well known vice-county method of recording, an idea which was taken up by entomologists and other naturalists and led to a plethora of distribution maps. With advances in technology, mapping is now done on a grid basis, using the National Grid in Britain. In the early 1950s the Botanical Society of the British Isles commenced a scheme of mapping the distribution of flowering plants based on 10km grid squares, using a primitive system of cards with punched holes 'read' by machine.

The Biological Records Centre was set up at Monks Wood in l964, and stores grid reference data – about six million records of over 9,000 non-marine plants and animals. More recent county floras, such as that of Kent, divide their areas into 2km squares (tetrads), while Warwick brings in detailed ecology.

After the AGM, Retiring President's Address and tea, Clive Jermy rose again to introduce the next part of the meeting, which was to set out what we as a Society can do to play our part in the update of the fern atlas to be produced by the year 2000. He hoped it would not be just a record of distribution, but would show the ecology of a species: why it is there, its history and its possible future. The computer technology is now available to assist us, with overlays for temperature, rainfall, soil types and so on. Planners can only make the right decisions (for road building, quarries, etc.) by having the right information, and we as a Society can bring this information forward.

Barry Thomas then talked of work undertaken at the National Museum of Wales in Cardiff on the distribution of ferns. All editions (1940 onwards) of *Welsh Ferns* gave lists of herbarium specimens, but as the number of herbarium specimens increased, so it became necessary for the lists to become more condensed or in some cases omitted. Distribution maps of Welsh ferns were published in *Watsonia* in 1992, and these will be updated when the 7th edition of *Welsh Ferns* is published, hopefully in 1995.

The next speaker was Gavin Stark, who works with English Nature to conserve lower plants, collecting information about rare and threatened mosses and lichens. He uses the RECORDER environmental recording database program, which contains an extensive list of British plants and animals and enables detailed records to be stored and retrieved. The records can be selected and sorted quickly and efficiently, with information produced as printed text, maps, histograms or files. Using a laptop PC, he demonstrated the wealth of uses of the package, cleverly projected onto a screen for all present to see.

The meeting was wound up by Anthony Pigott, who spoke about the improvements and potential of modern computers and software: Global Positioning Systems use satellite bearings to give accurate locations anywhere in the world; in the near future, pocket computers will allow field recording enabling data to be transferred straight onto a home PC; all sorts of mappable information is readily available at 'affordable' prices. Once the information is collected there is now much more flexibility as to what you can do with it. We are now in a position, he concluded, to decide what we really want to do in mapping distributions, because the technology will allow us to achieve it.

All thanks must go to Alison Paul and other members of the Museum staff (current and retired!) for giving their time to organise a day that left us feeling stimulated and full of inspiration for the future.

Howard Matthews

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NATIONAL FIELD MEETINGS 1994

CORNWALL – 23-28 June

B. Porter *et al.*

Wednesday 22 and Thursday 23 June [Barbara Porter]. Fourteen members gathered at the guest-house in the small village of St Erme (10/850502) for the first BPS meeting in Cornwall for more than 20 years! On the first evening a few of us went for a stroll round the tiny village in the gathering gloom of a perfect sunset and found ourselves in the ancient churchyard trying to identify *Polystichum setiferum* by silhouetting a pinna against a brilliant orange sky. A pleasant if rather eerie introduction!

Thursday promised to be a busy day. The morning held a visit to Heligan Manor Gardens (20/997465), originally laid out in the 18th century, but which, since the First World War, has lain buried under a sea of brambles, saplings and weeds – as much as ten feet high by 1991. It is now in the process of being restored to original Victorian plans. Looking at the photographs taken before restoration began, one wonders how so much could have been achieved in such a short time (three years) – and mainly by volunteers. Many of the plants in the Gardens are survivors of plants grown from seed collected in the mid-19th century by Sir Joseph Hooker in the Himalayas and given to the owners for cultivation. Ferns seen in the gardens included a number of woodland ferns growing in the Jungle Gardens, *Polypodium interjectum* covering the roof of an old shed and *Blechnum chilense* everywhere! The Wild Wood, entered by permission only, is an ideal place to introduce woodland ferns to beginners as most of the common ones are there. A small grotto in the gardens is not being restored with its original planting scheme but, under the direction of Clive Jermy, is being made into a ferny dell which it is hoped will eventually hold a national collection of ferns. Interestingly, on the rocks around an artificial spring in the grotto can be found the gametophyte of *Trichomanes speciosum*. But the chief glory of the Gardens is the tree-ferns, mainly *Dicksonia antarctica* and *Cyathea dealbata*. Some are new plantings but some have survived or regenerated from the original garden plantings.

After a hurried lunch in the small café at the Gardens we set off to Fowey, to see *Polypodium cambricum (P. australe)* growing in relative profusion on the high wall lining one of the old lanes (20/125517) of the town. Unfortunately, the previous year's leaves were nearly dead and there was no sign of this year's fronds as yet.

Afterwards, we visited another garden, this time a private one, Polpey (20/088538), owned by a long time member of the Society, Bridget Graham, and her husband, Michael. Their extensive garden contains many interesting trees and shrubs amongst which Bridget grows her beloved ferns and Michael his collection of lilies. They had gone to so much trouble to make our visit a rewarding one, Bridget having named every fern in the garden especially for us. It is not possible to list everything in the garden but of particular interest were *Polystichum setiferum* 'Manica-Infantis' originally obtained from Reg Kaye, *Osmunda cinnamomea* growing in the pond, a large *Dryopteris stewartii* amongst the more scarce ferns present, also luxuriant *Arachniodes standishii* by the house, *Polystichum yunnanense* and the attractive *Polystichum makinoi*. Of especial interest, because we were to visit the site where the original plant was found on the way back, was the small, exquisite, but sterile *Polystichum setiferum* 'Carruggatt' found in Carruggatt Lane in *c.*1989 by Dr Gillian Matthews. My special memory, though, is of the vigorous *Woodwardia radicans*, which is the cause of a gentle running battle between Bridget and her husband, who has fears of it invading his lawn! The big surprise was the lovely afternoon tea they had so thoughtfully provided.

To finish the afternoon in fine style, we went to the privately owned Carruggatt Wood (20/997465) where we saw *Dryopteris aemula* growing quite profusely on a small stream bank in deepest shade; but we failed to find *Polystichum setiferum* 'Carruggatt' at the site where it had been originally found.

After dinner, the dining tables were cleared back and Neil Timm delighted us with an illustrated talk on ferns as seen from a commercial grower's point of view.

Friday 24 June [Margaret & John Collins]. Thunder during breakfast warned us about the day to come. The storm followed us 35 miles to Rough Tor (20/144807) on Bodmin Moor, where much to our delight both *Hymenophyllum tunbrigense* and *H. wilsonii* were found – well down amongst the granite boulders near the summit, along with, surprisingly, *Dryopteris aemula*.

After lunch in Camelford we moved on to Pendrift (20/101742) to look at *Asplenium adiantum-nigrum* variations and *A. obovatum* var. *lanceolatum (A. billotii)* growing in typically wet Cornish hedge-banks – and more rain! Then to Maidenwell pool (20/143718) where, amid the lunar landscape of abandoned china clay heaps, grows a patch of massed *Isoetes echinospora* on the eastern side of the pool just beyond the water's edge. It must be confessed that a number of us were more taken by the many greater butterfly orchids growing along the road leading to the pool!

After another excellent dinner at the guest-house, Jennifer Ide introduced us to the morphological variants of *Asplenium adiantum-nigrum* for which we were to search on Sunday amongst the serpentine rocks of Kynance Cove on the Lizard peninsular. These plants were once thought to be *A. cuneifolium* but are now known to be ecotypes of *A. adiantum-nigrum*, with their own distinct morphology.

Saturday 25 June [Margaret Nimmo-Smith]. More members joined the original party for the weekend, and some for longer, at the Tourist Information Centre at Camelford (20/104836). Here, on the walls of a private car park next to the Centre, we found in a corner three plants of *Asplenium ceterach*, not a very common plant in Cornwall, as well as *A. trichomanes* subsp. *quadrivalens* and a good colony of *Polypodium interjectum*. On neighbouring walls we found *Asplenium scolopendrium, A. ruta-muraria* (also relatively scarce in Cornwall), *Dryopteris filix-mas* and *Athyrium filix-femina*.

Our next stop was the Castle at Tintagel and its environs. We parked in the car park at the top of the steep lane leading to the Castle (20/055885 to 053890) and as we walked down observed abundant cropped *Asplenium scolopendrium*, also *Athyrium filix-femina*, *Dryopteris filix-mas* and *Pteridium aquilinum*, and nearer the sea a few plants of *Asplenium marinum*. Our first unusual sighting of the day was three plants of *Cyrtomium falcatum* growing to a large size under a rock above the path, presumably naturalised there. The Castle and surrounding area were then explored. More *A. marinum* was found and also *A. obovatum* var. *lanceolatum* tucked in on the rocks where there was an accumulation of soil. A further site for this was on the outside of the churchyard wall of St Materiana's Church (20/050884), which some members managed to explore. The back lane from the church to the village, at its lowest level, also had several plants of *A. marinum* quite some distance from the sea. Andrew Leonard (the member from Portsmouth!) found a superb plant in a sheltered sea cliff site with fronds a foot long (*c.*20/052890). Anthony Pigott also found *Dryopteris affinis* which he identified as being either morphotype *insolens* or *cambrensis*.

After picnicking or sampling the hostelries in Tintagel the party reassembled to explore

St Nectan's Glen (20/075887). *Polypodium interjectum* was growing on the house walls at the beginning of the path into the glen (20/076892), and some good plants of *Asplenium adiantum-nigrum* were found in the hedge-bank further along the path, as well as *Polypodium vulgare* and *Asplenium scolopendrium*. Entering the wood in the glen we found ferns in abundance: *Athyrium filix-femina*, *Pteridium aquilinum*, *Dryopteris dilatata* and *D. affinis*, identified by Anthony as morphotypes *affinis* (at the start of the lane), *robusta* (on a high bank above the stream) and *borreri*. At one point before descending to stream level we looked down onto a magnificent carpet of ferns on the opposite bank, mainly *D. affinis* and *Athyrium filix-femina*, all tantalisingly inaccessible because of the loose shale on which they were growing! We continued some way upstream, sighting *Blechnum spicant* near the water and *Polypodium vulgare* on trees, before returning to the cars, carefully scrutinising the mossy rocks on the way, but failing to find *Hymenophyllum*, which has not been recorded for the glen despite being a promising site.

Our last visit of the day was to Boscastle (20/096914) where we were shown *Adiantum capillus-veneris* in a natural location on the harbour cliff, growing in a base-rich flush alongside of which were young plants of *Osmunda regalis* appearing to be tenuously clinging to life. Other ferns seen in Boscastle included a large clump of *O. regalis* on the opposite bank of the stream to the car park, *Athyrium filix-femina, Dryopteris filix-mas* and *Asplenium marinum* on the harbour cliff and *Polypodium interjectum, Asplenium adiantum-nigrum, A. trichomanes* subsp. *quadrivalens, A. ruta-muraria* and *A. scolopendrium* all growing on garden walls.

After dinner, Dr Paul Gainey, a local botanist well known for his intimate knowledge of the Cornish flora, gave us an illustrated talk about the flowerless plants of Cornwall, explaining the geographical, geological and climatological reasons for the particularly rich flora of his beloved county.

photo: R. Smith

Kynance Cove, Cornwall

Back: Ray Smith, Keith Holly, Neil Timm, Andrew Leonard, Mick & Linda Craddock.
Middle: Caroline Thomas, Margo Ladell, Anthony Pigott, Trish Craddock.
Front: Brenda Smith, Barbara Porter, Rose Murphy, Jennifer Ide, Margaret Nimmo-Smith, Margaret & John Collins.

photo: R. Smith

Jane Bird leading BPS and Cornwall NCCPG members among ferns at Penjerrick, Cornwall.

Sunday 26 June [Neil Timm]. The group headed south-west to the Lizard Peninsular, stopping on the way to visit Perranarworthal churchyard (10/779389) to see ferns carved on two of the tombstones before continuing to Penjerrick (10/779307) where we were joined by members of the Cornwall NCCPG. The garden was originally laid out by the Fox family, and is now in the process of being restored with the help of Jane Bird, who we were lucky enough to have as our guide. Upon entering the garden, members were pleased to find *Dryopteris crispifolia* growing just inside the gate, as well as a large number of trees and shrubs exotic to members from the north. Jane Bird gave us a short history of this interesting garden before leading us off to see a large range of hardy and tender ferns growing in a delightful period greenhouse, also in the process of being restored. In the lower part of the garden, which is reached by a bridge over a small lane, we saw the main body of tree-ferns, growing mostly beside a small stream and several little pools. Many, we were told, are original imports from New Zealand brought by the Fox family as ballast in their ships, and are now thought to be amongst the tallest in Europe. We also saw fine stands of *Osmunda regalis*, naturalised *Polystichum polyblepharum* and *Athyrium filix-femina* which were having to be treated as weeds! Finally, before leaving Penjerrick, the group visited the lane between the two gardens to see *Cystopteris fragilis* (rare in Cornwall), naturalised tree-ferns and *Selaginella kraussiana*, growing with the usual range of Cornish hedge ferns on the banks.

After lunch we drove to Kynance Cove (10/683135) near the Lizard Point where, after a brisk walk along the cliff we searched for and found the rare serpentine form of *Asplenium adiantum-nigrum (q.v.)*, and also *A. marinum*.

Time now being short the group split to visit Goonhilly Downs, some going to see *Equisetum telmateia* in woods near Rosenithon (10/797213), while the rest went to search for *Pilularia globulifera*, which we eventually found after a difficult search in Croft Pascoe Pool (10/732198). Finally, being keen to see *Ophioglossum vulgatum*, we drove across the county to the north coast and a sand-dune site, where we had been told it could be seen in large numbers. We were pleased to find several hundred fruiting plants, in prime condition, growing in a space of perhaps ten square yards.

No dinner is served at Trevispian-Vean Farm on Sunday evening and so we repaired to an excellent hostelry at Comford, the Fox and Hounds (10/735399!), recommended by Rose Murphy, for an enjoyable gastronomic experience to round off a super day!

Monday 27 June [Andrew Leonard]. The group assembled in Wadebridge at 10.15 a.m. and proceeded to the old bridge (10/991724) over the River Camel. Ferns found here were *Asplenium marinum, A. ruta-muraria, A. trichomanes* subsp. *quadrivalens* and *A. adiantum-nigrum*, but no *A. ceterach*. A small splinter-group of two visited a wall on the other side of the river by tennis courts and a recreation ground (on the A389) on which were abundant plants of *A. ceterach, A. trichomanes* subsp. *quadrivalens, A. ruta-muraria, A. scolopendrium* and *Polypodium cambricum*. Matt also discovered a butcher's shop in Market Street with some magnificent baskets of *Adiantum capillus-veneris*. Astute questioning by our Hon. Sec. revealed that the butcher was well aware of what he had in his possession and was completely inured to Matt's covetous pleas to part with one of them!

The group then walked along the Camel trail on the west side of the river, dodging the bicyclists, and found *Dryopteris filix-mas, D. dilatata, D. affinis* morphotypes *affinis* and possibly *borreri*, *Polypodium vulgare* (? – all three species have been recorded in the past), *Polystichum setiferum, Asplenium scolopendrium, A. trichomanes* subsp. *quadrivalens, A. adiantum-nigrum* and *Pteridium aquilinum* in the hedge-banks along the Trail. There was great excitement and some amusement when two small plants of *A. ceterach* were found! Where it was possible to leave the Trail and take a brief excursion onto the river beach, several splendid plants of *A. marinum* were found on the sea cliffs. But the highlight of the morning was the finding of a native site for *Adiantum capillus-veneris*: the bank at the side of the Trail. This fern appeared to be doing very well and had quite the largest fronds and pinnae we were to see.

Following a drive and some lunch, the group reassembled at Retire Common (20/005635), an area of fen heath, where the aim was to find *Lycopodiella inundata*. Eventually, after an extensive search especially amongst areas recently burnt, we found two plants – all of half an inch and a quarter of an inch long respectively! Also seen on this heathland were *Blechnum spicant, Dryopteris dilatata, D. affinis* (morphotype ?), *Athyrium filix-femina* and *Osmunda regalis,* though rather small plants of the last species.

Breney Common is wet grass heath with some willow scrub in the wet areas and birch scrub in the drier parts and with signs of healthy regeneration in one or two areas. We found a healthy stand of *Equisetum fluviatile* in a small pond (20/057611), *Pilularia globulifera* growing in the mud along a wet path (20/057611), and many plants of *Osmunda regalis* (20/056612), some of which were very large. Some lively discussion surrounded the exciting find of several plants in the vicinity of the *Osmunda* that displayed many of the characteristics of *D. carthusiana*. [This has since been confirmed (ACJ) which is most pleasing as this species has not been seen on Breney Common for at least ten years and was last officially recorded in the 1970s. RJM]

The last site of the day was the china clay depot at Carne Cross (20/046565). Here we found *Equisetum fluviatile, E. arvense* and *E. palustre* and an interesting variant of the latter identified as var. *pachystachyon* (confirmed by PJE, Kew), originally described in the area about 1926. Also in the surrounding hedgerows could be found *Dryopteris affinis, D. filix-mas, D. dilatata, Athyrium filix-femina* and *Pteridium aquilinum*.

In the evening, after our meal, our host Ernie Dymond, took us and the other guests on his farm for a ride around the lanes in the vicinity. His son expertly drove the tractor and we all sat on bales of straw on a very long trailer, whilst Ernie pointed out features of interest in between telling us some splendid tall stories! Afterwards, the member for Portsmouth *(q.v.)* gave a very interesting, illustrated lecture on the ferns of the Azores whilst many of the group were soundly asleep at the end of another splendid day!

Tuesday 28 June [Jennifer Ide]. After a setback caused by the leader's car stubbornly refusing to start, we eventually set off to what must be the most beautiful churchyard in Britain. The little 13th and 15th Century church of St Just-in-Roseland (10/848357) nestles in a semi-wooded garden on the water's edge of the Carrick Roads.

A large stand of *Blechnum chilense*, four to five feet in height, grows around one of the three ponds in the church garden, whilst *Selaginella kraussiana* has become naturalised in the lawns around the ponds. As one might expect from the nature of the grounds a number of woodland species were also found: *Athyrium filix-femina, Polystichum setiferum, Dryopteris dilatata* and *D. filix-mas* which, together with *Asplenium scolopendrium*, was also growing between the concrete bars of the cattle grid under the porched entrance to the grounds. Very attractive foliose, but mostly sterile forms of *Dryopteris affinis*, probably morphotype *robusta*, were common in the church grounds, together with morphotype *affinis*. On garden walls in the near vicinity of the church were found *Asplenium trichomanes* subsp. *quadrivalens, A. scolopendrium* and *A. adiantum-nigrum*.

Reluctant to leave St Just, we made our way to the little harbour town of St Mawes. The discovery of *Equisetum arvense* in the car park elicited no excitement whatsoever and we made our way to St Philleigh's at St Mawes (10/845330) to wonder at the healthy *Adiantum capillus-veneris* growing on the wall around the church. Ivy threatens to out-compete the maidenhair so some judicious gardening was done and a note made to write to the vicar to recommend that the ivy be kept in check. Jennifer and Rose were horrified to find that since their reconnoitre in April, the owners of the cottage opposite the church had cleaned the wall around their courtyard of all vestiges of plants, including many *Asplenium trichomanes* subsp. *quadrivalens,* and painted it white! However, growing on the courtyard side of the wall were magnificent colonies of *Adiantum*. So magnificent were some of them that our first impression was that they were growing in hanging baskets, but examination found this not to be so. We can only be thankful that these plants had been found so attractive by the occupants that they had decided to keep them.

After lunch at St Mawes, crab sandwiches for some(!), we went on to Portloe, a small fishing village where the houses seem to hang on the sides of the steep, cliff-like valley sides. The car park (10/938396) was just outside the village and so a rather warm walk down the steep hill to the harbour was necessary, but not without its rewards. *Asplenium trichomanes* subsp. *quadrivalens* was found growing quite lusciously around a drain of a cob cottage; a little further down the hill on the wall was found *Polypodium interjectum*. Opposite All Saints church, albeit small plants of *Asplenium adiantum-nigrum* and *A. ruta-muraria* were growing. But our real objective was the *A. obovatum* subsp.

lanceolatum, protected by brambles, growing in the wall of the Cornish hedgerow (10/940395) and on the cliffs on the other side of the tiny beach. The *Equisetum arvense* found growing at the entrance of the car park on our return, was greeted with the usual lack of interest!

We left Portloe for Lamorran Wood, north of the Roseland peninsular, via Veryan (10/916396) to see the Round Houses at the north and south entrances of the village. Tradition varies as to the origin of these houses but all invoke the devil in some way. Lamorran Wood (10/8842) made an ideal site for the beginners in the group to see how many of the common woodland ferns of our flora they could now recognise, for this lovely wood, formerly typical oak woodland such as usually formed around drowned river valleys but since interfered with by man, was abounding in them. We recorded *Asplenium scolopendrium, Polystichum setiferum, Blechnum spicant, Athyrium filix-femina* – both green and red-stemmed forms, *Dryopteris dilatata*, *D. affinis* – anyone feeling courageous could attempt to distinguish the morphotypes *affinis, borreri* and *cambrensis*, and *D. aemula* – well, it is relatively common in Cornwall!

The meeting concluded, most fittingly for a meeting held in Cornwall, with traditional afternoon tea at one of the excellent tea shops which abound in Cornwall. On many counts the meeting can be considered to have been a success. We saw some super ferns, the weather was very kind to us apart from one day, the guest-house was tops, the cream teas and ice-creams scrumptious, and the company great (20 members attended over all), but most pleasingly we made contact with four new Cornish members. At this point I would like to express my personal thanks to those who suggested sites and gardens to visit, but especially to Rose Murphy, BSBI plant recorder for Cornwall, for all her suggestions, help and guidance in the preparation of this meeting. She unstintingly gave of her time, expertise and intimate knowledge of Cornwall. Thank you Rose so much.

CONFERENCE & FIELD EXCURSION, EDINBURGH – 28-31 July

Conference on The Ecology and Conservation of Scotland's Rare Ferns, Royal Botanic Garden, Edinburgh – 28-29 July

Margaret Nimmo-Smith

[*Most of the presentations will be published in more detail in the 1995 Pteridologist.*]

Wednesday evening found many of us booking in at our student accommodation at Pollock Halls, Edinburgh University and meeting fellow pteridologists in the bar. A rail strike had unfortunately disrupted many members' travelling plans so that some arrived a day earlier and others a day later than originally planned.

Thursday's programme at the Royal Botanic Garden, Edinburgh (RBGE), started with introductions to our conference organisers Dr Adrian Dyer, Dr Stuart Lindsay, Miss Heather McHaffie and Dr Chris Page, and an invitation to order the attractive tee-shirts specially designed for the conference.

The formal proceedings started with an introduction by Dr David Mann, Deputy Keeper of RBGE, who claimed his main entitlement to an interest in ferns stemmed from finding a new location for *Woodsia ilvensis* on a field trip! He felt that in an age when research money was declining and increasingly had strings attached, there was a place for the BPS to co-ordinate activities at local, national and international level. Chris Page then gave a half hour introduction to past pteridology at RBGE. He described how the early history of scientific pteridology was interwoven with the history of medicine and detailed some of the positive results of the Victorian Pteridomania. The long Edinburgh association with pteridology began with the Victorian, John Lindsay who made discoveries about the fern life cycle and continued down to Dr Page as the first pteridologist appointed at the Garden.

After coffee, Chris Page resumed with his view of the present and future importance of pteridology in Edinburgh. He saw the Garden as a reference centre and focus for the study of Scottish pteridophytes and their conservation and also making an important contribution to international conservation. Mr Phil Lusby from the Scottish Rare Plants Project (based at RBGE) then gave an account of approaches to conserving ferns in Scotland. Taxonomy, ecology and population monitoring, *in-situ* and *ex-situ* conservation techniques, and education are all important elements of conservation.

After lunch we reassembled for a general tour of the Garden. Our guide outlined the history of the garden from its 17th century origins as a physic garden near Holyrood, to its present site with land acquired over the last 150 years. The RBGE now also has satellite gardens at Younger, Logan and Dawyck which extend the range of microclimates available for growing different plant collections. A magnificent stand of *Pteridium aquilinum* used as ground cover between birches was noted. Our group visited the alpine house and surrounding area of raised beds and troughs where interest alighted on pans of *Cheilanthes* and *Polystichum stimulans.* We had a quick glimpse of the long herbaceous border before touring the demonstration garden and seeing some of the plants on the Scottish Rare Plant Trail and in the Cryptogamic Garden. We then snaked back to the terrace café and enjoyed the fine view to the New Town and the Castle. Below we could see the new Chinese garden under construction which will house recent plant collections from different temperate zones. After a quick tour of the famous rock garden we returned via magnificent *Osmunda regalis* near the pond.

Stuart Lindsay spoke next on his research with Adrian Dyer on soil spore banks and their importance to fern conservation. Soil spore banks are widespread and constantly available; collecting does not disturb existing populations and soil samples are easily stored and cultured. The main difficulty at present is identification of some of the young sporelings thus raised, but they hope to publish an identification guide to sporelings.

The afternoon finished with guided tours of the Garden's pteridophyte collections. We first visited the shade tunnel in the research area where Adrian Dyer showed us rows of thriving young plants grown from the soil spore bank project, including *Woodsia alpina* and *Asplenium septentrionale.* There was also an extensive collection of *Equisetum* species and hybrids grown in pots. The other side of the tunnel was devoted to foreign hardy and semi-hardy ferns which it was intended to plant in the RBGE outstation gardens with milder climates.

Our next visit was to the Herbarium where we were able to examine a display of herbarium sheets. Douglas McKean explained that their holdings of over 6,000 pteridophyte herbarium specimens represented collections from all over the world, including British material of rare species from populations no longer in existence. Miss Elizabeth Watt next explained the operation of the Fern Gene Bank and demonstrated the method of collecting and cleaning the spores prior to storage in small phials in freezers. All material is verified and, where possible, has a voucher herbarium specimen. Dr Kerry Walters demonstrated the computer database which is used to store information on all the Garden's accessions.

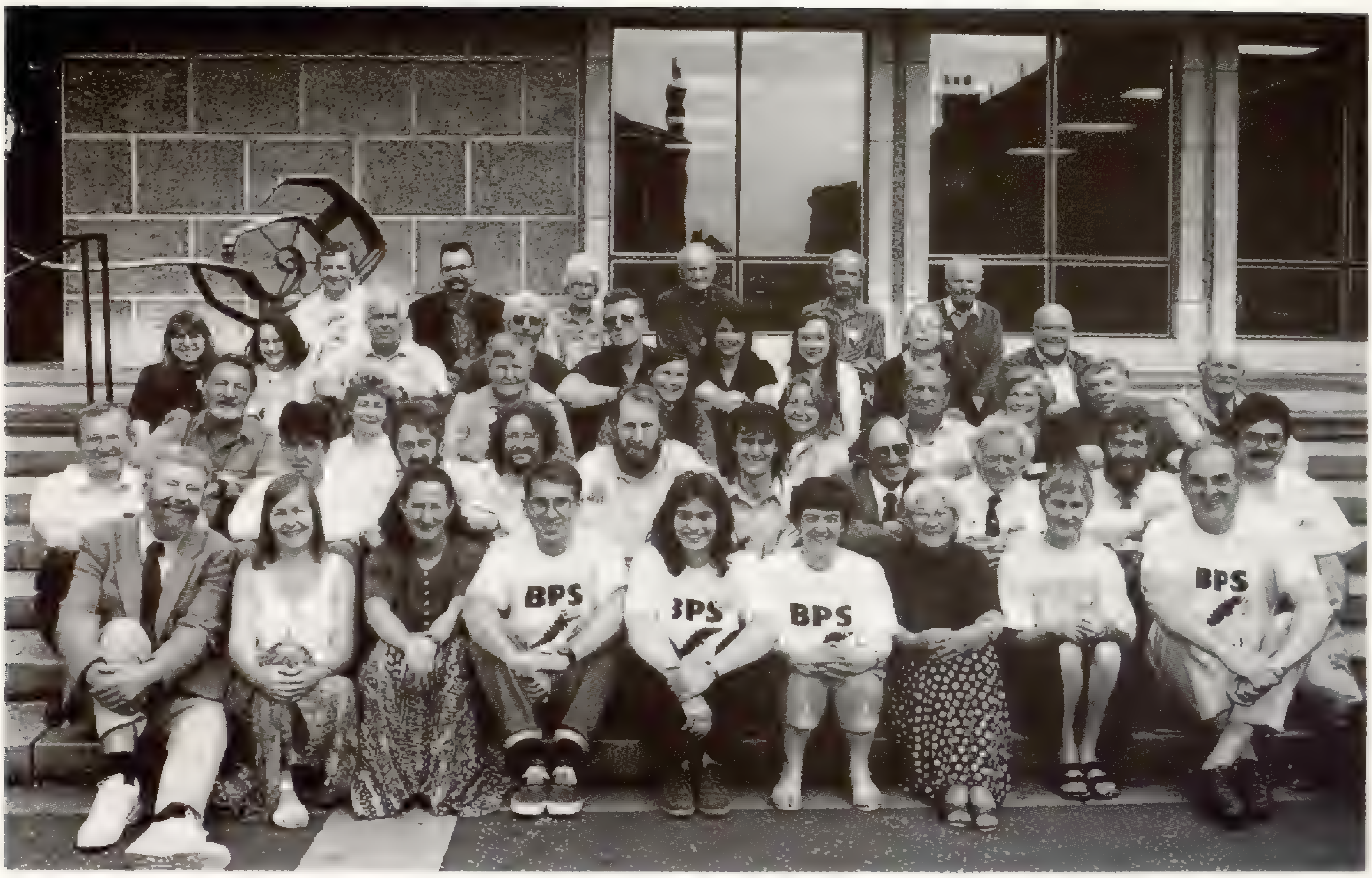
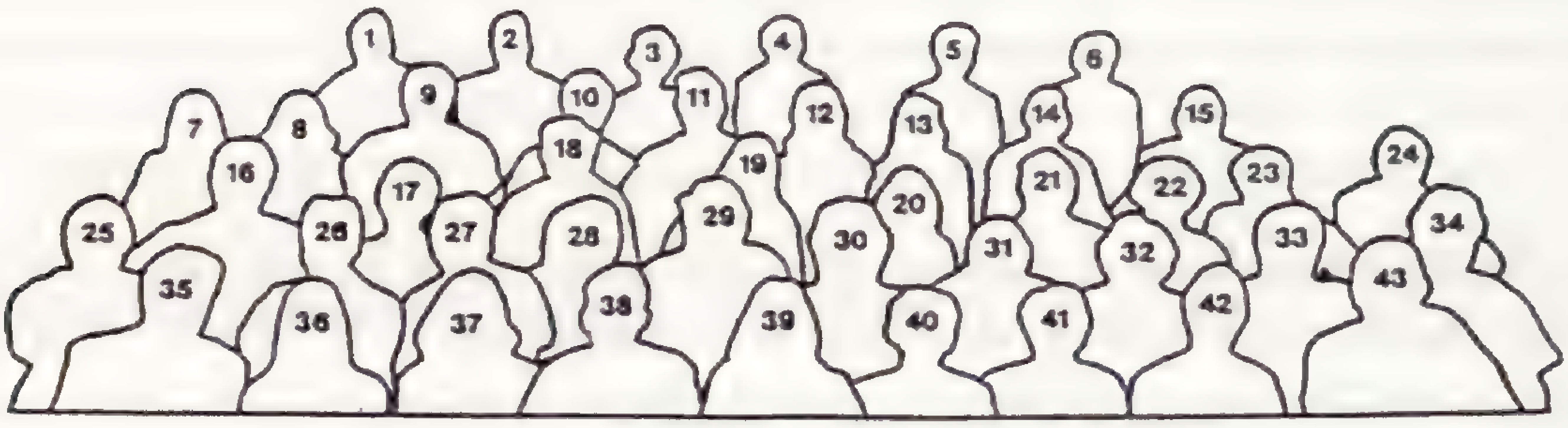


photo: Debbie White, RBGE



Conference on the Ecology and Conservation of Scotland's Rare Ferns,
RBG Edinburgh, 28-31 July

1 Christopher Fraser-Jenkins, **2** Johannes Vogel, **3** Dorothy Fortune, **4** David Walkinshaw, **5** Peter Edwards, **6** Peter Hainsworth, **7** Mila Heathfield, **8** Katharine Bridges, **9** John Mitchell, **10** Graham Ackers, **11** Mick Craddock, **12** Linda Craddock, **13** Trisha Craddock, **14** Alison Rutherford, **15** Alastair Wardlaw, **16** Jack Garstang, **17** Marjorie Garstang, **18** Margaret Kingston, **19** Margaret Nimmo-Smith, **20** Josephine Camus, **21** Eric Baker, **22** Rita Baker, **23** Matt Busby, **24** Allan Stirling, **25** Frank McGavigan, **26** Roland Whiteman, **27** Vincent Fleming, **28** Phil Lusby, **29** Richard Bateman, **30** Gavin Stark, **31** Jim Parks, **32** Clive Jermy, **33** David Tattersfield, **34** Fred Rumsey, **35** Chris Page, **36** Alison Paul, **37** Lynne Farrell, **38** Stuart Lindsay, **39** Elizabeth Watt, **40** Heather McHaffie, **41** Rose Murphy, **42** Mary Gibby, **43** Adrian Dyer.

[**Participants absent from photograph:** Frieda Christie, Clive Dixon, Russ & Max Drakeley, Andrew Ensoll, Geoffrey Harper, Sally Heron, David Ingram, Junxia Ji, Roger Kemp, Ross Kirby, Lady Lang, David Mann, Ron McBeath, Douglas McKean, David Mitchell, Vicki Parks, Liz Sheffield, Hans Sluiman, Phil Thomas, Michael Usher, Kerry Walters, Colin Will.]

The final visit of the day was to the public fern glasshouse which houses a collection of non-hardy pteridophytes, including the climbing fern *Lygodium japonicum*, epiphytic and tree-ferns and the world's tallest horsetail species, *Equisetum robustum*. We found we were then in the right location for the sherry reception and were able to socialise in the relaxing setting within the landscaped plant collections in the glasshouse. Professor David Ingram, the Regius Keeper, gave the BPS a warm welcome to Scotland and the Garden. For some the evening continued with an invitation to enjoy our Chinese take-away in Heather McHaffie's home; in the long evening light she gave us a bonus tour of the interesting fern collection in her garden.

Heather McHaffie started the proceedings on Friday, talking about the post-glacial history of Scotland's rare ferns. She showed that pteridophytes were early colonisers after the retreating ice and today will colonise habitats created by man's activities, such as quarries, mortared walls and railway cuttings.

After coffee, Mr John Mitchell (ex NCC) described setting up a monitoring system for *Woodsia* in Scotland, particularly using photography to identify the exact location of plants, which could then be monitored over the years. Dr Vincent Fleming (Scottish Natural Heritage) followed with a picture of the declining *Woodsia* colonies in Scotland. Reasons for this he suggested might be landslips, genetic poverty giving less vigour, drought and grazing. Intervention by reintroduction, translocation and the use of soil spore banks should be given serious consideration. Adrian Dryer then described the temperature requirements for spore germination in *Asplenium septentrionale*. The results of experiments helped to explain the restricted habitat for this species – dark-coloured volcanic rocks exposed to the south.

Professor Jim Parks, from Millersville University USA, put forward the controversial proposition that *Cystopteris dickieana* should not have specific status as there is not consistent correlation between frond morphology, spore type and allozymes in *C. fragilis / C. dickieana*.

After lunch we divided into small groups for tours of RBGE research facilities. We visited the newly established laboratories where Dr Hans Sluiman showed us the growth cabinets providing controlled culture conditions and Dr Kwiton Jong demonstrated the computer facilities used in conjunction with light microscopy for analysis of chromosome complements. Mrs Frieda Christie then showed us how material was prepared for examination with the scanning electron microscope and, in conjunction with Jim Parks, presented computer stored SEM images of echinate and rugose spores of *Cystopteris fragilis* and *C. dickieana*. In the library, Dr Colin Will showed us a selection of the best illustrated fern books, from a 16th century herbal of Dioscorides with hand-coloured woodcuts to many Victorian fern books, explaining the different techniques used for illustration including lithographs, woodcuts and nature-prints.

We reassembled in the lecture room for Mr Fred Rumsey's talk on the Killarney fern based on three years of research at Manchester University. Despite Victorian depredations and the paucity of known modern sites, he felt encouraged by new discoveries in the last twenty years. Recent research and recording has shown that the gametophyte generation persists in widespread locations which no longer support sporophytes. Chris Page then introduced us to the different types of bracken he had found in Scotland, which he claimed were clearly distinct on the basis of morphology and could sometimes be distinguished at a distance from a moving car or even train! Dr Elizabeth Sheffield then described her current investigations of the relationships of forms of *Pteridium* from all over the world using molecular 'finger-printing' techniques.

The final talk was from Professor Michael Usher, Director of Research and Advisory Services and Chief Scientific Advisor for Scottish Natural Heritage. He gave us a broad overview of the many issues relating to the conservation and monitoring of the 66 species and hybrid ferns and fern allies found in Scotland. It is important to determine what species there are and the communities in which they occur, so that local management practices can be developed to conserve threatened habitats at local level. At national and international level conservation agreements are essential to develop policy and legislation and to educate the public. To this end SNH has developed its Scottish Rare Plants and Species Recovery Programme.

After some general discussion a vote of thanks was proposed to the organisers for such a well-run and interesting conference and to the RBGE for their generosity in hosting the conference.

In the evening, members enjoyed the comfort of a cosy room (adjacent to the bar!) at Pollock Halls Conference Centre, in which displays had been assembled by various members. All were interesting, including a *Pilularia* exhibit by the conference organisers, where the superfast sporocarp-to-sporophyte-in-16 hours phenomenon was explained. Rose Murphy produced illustrated records of the fate of a *Trichomanes speciosum* colony in a Cornish glen over a 30 year period. Adrian Dyer exhibited some of his fern-decorated glassware and crockery, and Dr Roger Kemp further beautiful pteridophyte glassware. The results of the competition run during the conference were announced and prizes of fern plants awarded to the joint winners, Frank McGavigan and Prof. Alastair Wardlaw. [Their entries follow the field excursion report.]

Many members also climbed the lower slopes of Arthur's Seat (adjacent to Pollock Halls) where at least 26 clumps of *Asplenium septentrionale* were seen on the mostly otherwise bare parts of the dark siliceous rocks. It was encouraging to see these plants in their traditional home (first recorded in 1777), despite this now being in a city environment. *A. trichomanes* subsp. *trichomanes* was also present and at least one plant thought to be *A.* x *alternifolium,* the hybrid between the two. Some *A. ruta-muraria* and *A. adiantum-nigrum* were also seen.

Field Excursion to Central Highlands of Scotland – 30-31 July

Peter Edwards

After two days predominantly indoors, many of the members were keen to get out into the field. Leaving Pollock Halls at 9 a.m. we embarked on a 350 mile round trip encompassing a cross section of fern habitats. At 10.30 we arrived by coach at The Hermitage, Dunkeld, Perthshire (37/012421). Two hours were spent in these lovely woodlands, which belong to The National Trust and include, incidentally, the tallest tree in Britain, a 212ft Douglas Fir. It was good to see that pteridophytes formed most of the ground flora! Most obvious were *Dryopteris filix-mas*, *D. dilatata* and *D. carthusiana*, with *Pteridium aquilinum* subsp. *aquilinum* common in places. Careful searching and collecting by Chris Fraser-Jenkins, Clive Jermy and Mary Gibby and subsequent checking of spores revealed that *Dryopteris affinis* subsp. *cambrensis* was common, including very good typical plants of the large woodland form. *D. affinis* subsp. *borreri* was present in considerable variety, and *D.* x *complexa* nothosubsp. *critica* was confirmed (*D. affinis* subsp. *borreri* x *D. filix-mas*). There was also a *borreri* masquerading as this, but the spores showed it for what it was. No *D. expansa* was found. There were some excellent carpets of *Gymnocarpium dryopteris*, even below moderately dense bracken, likewise *Phegopteris connectilis.* Not far from the bridge hundreds of sporelings of the former adorned mossy drainage ditches through bracken swards, accompanied by *Blechnum spicant*. *Dryopteris carthusiana*, *Oreopteris limbosperma* and *Equisetum sylvaticum* were present, but appeared to be rare. Nearer the river many very healthy and large *Polystichum aculeatum* grew, with *Athyrium filix-femina*.

On the bridge by Ossian's Hall (a 1758 folly) were *Cystopteris fragilis*, *Asplenium trichomanes* subsp. *quadrivalens* and *A. ruta-muraria*. Nearby, on the almost vertical side of the river gorge was a small dense healthy turf of *Hymenophyllum wilsonii* and several metres above it, a few shrivelled fronds scattered widely amongst a dense bryophyte jacket. As if a third of our Hymenophyllaceae flora was not enough, Fred Rumsey proceeded to make it two thirds by discovering a turf of gametophytes of *Trichomanes speciosum* in a very dark hole! To add to this fine selection of pteridophytes, on several boulders near the main trails grew *Polypodium vulgare* and a suspected (not confirmed) *P.* x *mantoniae*.

At 12.30 we left for lunch in Pitlochry and then onto nearby Loch Faskally and altogether a different challenge. In warm sunshine, Chris Page showed us one of his recent northern *Pteridium* discoveries, at 27/915592, adjacent to normal *P. aquilinum* subsp. *aquilinum*. There were also good plants of that northern speciality *Equisetum pratense* nearby on the same road (27/913597). On to Rothiemurchus near Aviemore, and within ancient Caledonian pine forest terrain (27/896092) Chris's remarkable discovery of another odd *Pteridium* was appreciated by all as something different, with, amongst other characteristics, long distinctive 'tails' of the third segments. All these plants appeared to be sterile, but 100m away a further colony was found which was fertile and even more striking. Nearby, along a small stream were some *Athyrium filix-femina* and *Oreopteris limbosperma*.

photo: A.M. Paul

Johannes Vogel and Christopher Fraser-Jenkins study bracken near Loch Faskally, Perthshire.

In continuing warm sunshine, on to the various delightful Loch Insh-side accommodation that had been booked for members, and later the clans reassembled for an excellent leisurely meal at the Ossian Hotel, Kincraig.

Sunday 31 July dawned brilliantly, and by 9 a.m. members had gathered by Loch Insh (which obliged with *Equisetum fluviatile* and *Isoetes lacustris*) for the next stage for the remaining 36 members, to the hills of Cromdale, south-east of Grantown-on-Spey (37/066236). At around 300m, near the roadside, amidst superb and extensive *Calluna* heath managed by rotational burning, we examined some *Lycopodium clavatum*. In scree nearby, *Polystichum aculeatum* var. *cambricum* (see *Welsh Ferns*) fooled several of us who assumed it to be *P. lonchitis*. *Dryopteris affinis* subsp. *borreri* was present in small quantity, in its small exposed form; also *D. affinis* subsp. *cambrensis*, its small fronds upright, looking more like *D. oreades* than the big plants we had seen earlier in the wooded environment at the Hermitage. *Blechnum spicant* and *Oreopteris limbosperma* were present below the road in light scrubby vegetation along a stream. At another exciting site nearby we were shown large, vigorous and fertile colonies of *L. clavatum*, almost all on what was reputed to be the ghost of an old road, with *Erica tetralix* and *E. cinerea*. Some of the *Lycopodium* plants crept for up to 4m through adjacent *Calluna*. Also present was *Huperzia selago*, just ready to shed spores. Interestingly, it was clear that *Blechnum spicant* had survived burns well and was growing vigorously. *Diphasiastrum alpinum* was also present, some apparently being shaded out by *Calluna*.

Reluctant to leave, we were driven on to Braemar for lunch. A gentle journey on the A939, with its old Scots Pine and glistening birches by the River Don, gave us excellent views of huge carpets of *Gymnocarpium dryopteris* and *Phegopteris connectilis*. Heading south from Braemar on the A93 we entered a different treeless world and at *c*.550m (37/130754), near the Devil's Elbow, with warmth penetrating the cloud and mist we made our way up a steep slope of metamorphosed limestone and mica schist. Adjacent to a small stream was *Selaginella selaginoides* and sparse *Equisetum arvense*. But it was in, on and under the stabilised boulder scree itself that most of the ferns lived, variously protected by such rocks from the teeth of sheep and deer. There were dozens of *Polystichum lonchitis* plants, the largest found having 21 fronds, some up to 56cm long. Also present were *P. aculeatum*, *Dryopteris affinis* subspp. *borreri* and *cambrensis*, *D. filix-mas*, *D. dilatata*, *Cystopteris fragilis*, *Asplenium trichomanes-ramosum* (*viride*), *A. trichomanes* subsp. *quadrivalens* and *A. ruta-muraria*, the last, for once, in a natural habitat! Also, there were polypodiums chewed and not dwelt upon, *Oreopteris limbosperma*, *Blechnum spicant*, *Athyrium filix-femina* and very tiny *Equisetum sylvaticum* in the turf. Nearby, in the shelter of large rock outcrops grew *Phegopteris connectilis* and *Gymnocarpium dryopteris*. We were assured that this beautiful site was a typical Scottish alpine pteridophyte association!

Members eventually visited a different association on the opposite side of the road, *en route* spotting some *Huperzia selago*. In a small stream was a colony of the upright, montane form of *Equisetum variegatum*, about 80 shoots in all, a few of which were fertile. *E. arvense* (very sparse) grew nearby.

We just had time on the way back for an unscheduled visit to Branklyn Gardens, a National Trust garden in Perth. Accompanied by member David Tattersfield, who has worked there for 11 years, a frantic half hour was had amongst the good selection of fern cultivars there, including a large *Osmunda regalis* 'Undulatifolium'. There were *Dryopteris filix-mas* 'Grandiceps Askew', *Dryopteris affinis* subsp. *borreri* 'Angustata' and

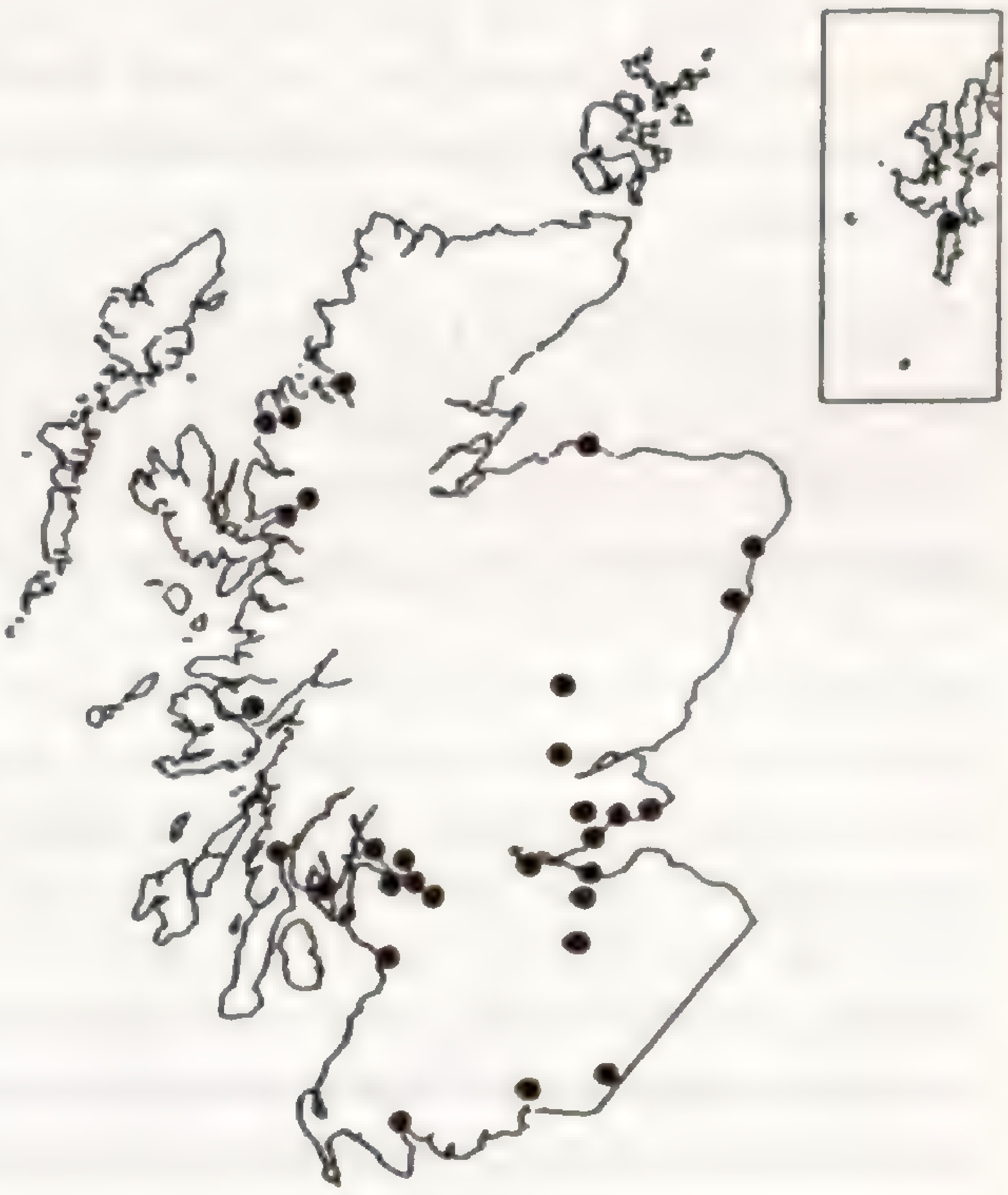
'Crispa Congesta'. *D. chrysocoma* was pointed out by Christopher Fraser-Jenkins, as having the largest spores of any *Dryopteris*. These are water-dispersed, via the huge indusia which do not open, but trap an air bubble and float whole!

The excellent coach driver got us back to Pollock Halls by 8.15, from where we all went our separate ways. This was a thoroughly enjoyable field weekend, with at least 28 wild pteridophyte taxa being recorded, good easy company, excellent accommodation and unbelievably balmy weather, all but the last largely due to the exemplary organisation by Stuart Lindsay, Heather McHaffie and Adrian Dyer. Anyone who has ever tried to do so much and in so many places especially appreciated the organisers' achievements!

EDINBURGH COMPETITION

For the Edinburgh conference a competition was devised by Adrian Dyer and Stuart Lindsay, inviting people to "Name and describe this pteridological taxon" – the distribution of which was supplied on a dot map. The following two entries were joint winners (seven entries); they are followed by Adrian and Stuart's solution.

[Map actually shows distribution of BPS members in Scotland.]



NAME (TAXON): *Pteridologicus scoticus* F. McGavigan

DISTINGUISHING CHARACTERISTICS: A variable, often tall, tufted fern, superficially like a more bristly *Pteridologicus britannicus*, but generally more handsome and attractive in appearance, and clearly distinguished by its alcoholic scent especially after very little pressing. Generally pinkish with pale brown blotches and occasional bright colours in a chequered pattern above the very hairy rachis. Spores, held in very leathery sori, or 'sporrans', ripen at any time but especially on Saturday nights. Has been known to hybridise with *P. britannicus* resulting in many grotesque oddities, avidly sought after by collectors. Subspecies include *P.s. pageus* – a particularly tufted, expansive plant, thought by some authorities to be a foreign introduction, *P.s. lindsayus* – superficially similar to the above ssp. but less tufted and of proven native progeny, having been rediscovered after an absence of 200 years in a soil spore bank near Edinburgh. Plus many others.

CONSERVATION STATUS: Although rare, this fern is remarkably persistent with clusters around botanical gardens and sources of alcohol for which it has a particular affinity. It appears that it uses the alcohol as an antidote to its one known pest – the Scottish midge – which is harboured by the much commoner *Pteridium* species. Bracken itself has occasionally been seen to swamp *P. scoticus* which however always seems to emerge after relieving itself of excess fluid. It is clear that if the existing legislative framework re alcohol consumption remains the future of this species is assured.

NAME (TAXON): *Ferncrazia beepee-essia* ssp. *scotica* A.C. Wardlaw

DISTINGUISHING CHARACTERISTICS: Evergreen, prolific, distinctive appearance, surprisingly motile; of worldwide distribution; sporophytes recently observed in a compact group in Edinburgh. Alcohol tolerant. Many have strange nocturnal habitats. Variously depauperate and crested varieties may be found south of the Watford Gap. The type subspecies can be cultured on a haggis-based compost with good drainage. Gametophytes are sporran-shaped and hirsute. A decoction of the rhizome is alleged to cure the ringing in the ears caused by too close proximity to bagpipes. Other uses include bedding material for Loch Ness monsters. The partially uncoiled crozier provides a useful tool for fishing out bunches of keys that have accidentally slipped through the grid of a drain.

CONSERVATION STATUS: Not immediately threatened except for infestations by the Samuel Johnson bug which causes young sporophytes to migrate down the highroad into England.

NAME (TAXON): *Homo sapiens* subsp. *pteridophilus* var. *scoticus* A.F. Dyer

DISTINGUISHING CHARACTERISTICS: Like bracken, the SPECIES has spread dramatically since the forests were cleared and now encroaches on all habitats. Its vigour appears to have increased as a result of hybridisation with alien genotypes introduced from other parts of the world over the last 2000 years or so during which time there has been active evolution with respect to dispersal mechanisms. Despite allocating a major part of its resources to defence mechanisms, it has very highly developed allelopathic interactions and is capable of suppressing almost any other organism with which it comes into close contact. As a consequence, it is a serious weed but attempts at control have been largely unsuccessful. Mortality resulting from epidemic pathogens or competition in crowded populations causes only minor and temporary reductions in population expansion.

The SUB-SPECIES occurs in small numbers throughout the species range but is more often to be found, sometimes in small groups, in dark, wet habitats where angiosperms are scarce. A close association with other pteridological taxa suggests that it might be symbiotic or semi-parasitic on them. It is not easily distinguished morphologically and identification requires close observation over an extended period. It is an outbreeder, inter-fertile with other sub-species.

The VARIETY is geographically isolated and rarely found associated with other members of the sub-species outside Scotland. It is adapted to lower temperatures and is more tolerant of high rainfall and attack by *Culicoides impunctatus* Goetghebeur than the other varieties. It is widely distributed in Scotland but very rare.

CONSERVATION STATUS: The sub-species is threatened because there is little recruitment of juveniles to maintain populations currently composed mainly of post-mature individuals. Small but healthy populations can be found in private gardens but public gardens and similar institutions have only dwindling relic populations. Variety *scoticus* is particularly vulnerable because of the small number of individuals and localities. Government funding is urgently needed to prevent those in public gardens becoming extinct.

CO. MAYO, IRELAND – 13-20 August R.J. Murphy

As this was a combined meeting with the BSBI (the first week-end), the number of people attending varied from day to day. The total number proved to be 17, with representatives from the BPS, the London Natural History Society and the BSBI. One member of the BPS, Mrs Fay Mandt, had travelled all the way from Germany in order to attend the meeting.

Based on Castlebar, the aim of the meeting was the mapping of the ferns, 10km square by 10km square, in preparation for the next edition of the *Atlas of Ferns of the British Isles*, hopefully to be published within the next decade. This meant visiting as many 10km squares as possible within the time available – we managed 25. It soon became clear that there was a second aim for the meeting – the finding of *Trichomanes speciosum* gametophyte!

Saturday, 13th August, was a quiet start to a very energetic week. In cool, rather grey weather, we drove north from Castlebar to Pontoon (G204037). Here we explored a steep wooded slope by the side of the road. Granitic rocky outcrops were much in evidence and gametophytes of *Trichomanes speciosum* were soon found in several of the deep recesses within them. With this first success energies were directed towards other plants and the usual woodland ferns were soon listed – *Athyrium filix-femina, Blechnum spicant, Dryopteris filix-mas* and *D. affinis* agg., (four morphotypes were eventually to be determined). The luxuriant plants of *D. aemula* attracted much attention and a search was made for *D. carthusiana*, but this was not found though the habitat seemed to be correct. A mortared wall nearby produced *Asplenium ceterach, A. ruta-muraria* and *A. trichomanes* subsp. *quadrivalens*, while a low hedgebank proved to be rich in the fronds of *Polypodium vulgare*.

Climbing up into the hills to the south-west (G1401) we were able to add *Polystichum aculeatum* and *Selaginella selaginoides* from rocky outcrops and steep flush sites at Windy Gap above Levally Lough. Two horsetails were seen in abundance around the ruins of old cottages below Croagmoyle (M1096), these were *Equisetum arvense* and *E. telmateia*.

On the Sunday (14th), we travelled south via Westport taking the road past the imposing mountain of Croagh Patrick – two members of the group were eventually to climb this, looking for the Serpentine outcrops and any unusual aspleniums that might be found on them.

A stop was made at Lough Nah-alt-ora (L7974) where the surrounding land was dotted with ancient tree stumps, the remnants of a forest that could be dated back to 6000 BC. Here, though ferns in themselves were few, *Pilularia globulifera* was seen in some abundance at the water's edge. Bogs were traversed in a bid to get good photographs of the pillwort where it emerged onto the land and within the shallows there were, as a bonus, delightful stands of *Lobelia dortmanna* (water lobelia) and *Eriocaulon aquaticum* (pipewort), the latter in flower.

Rain had started and as it increased we continued through the Doo Lough Pass between high dark mountains, making a diversion up a side road towards a forested area. But the ferns here were few, it was evidently too acid, and in lowering cloud and more rain we made our way to the east shores of Fin Lough (L8465). These were more rewarding – *Athyrium filix-femina, Blechnum spicant, Dryopteris aemula, D. affinis* agg. (including *D. affinis* morph. *borreri*) and *D. dilatata* all growing well in a ditch. Mortared walls in the area supported the usual *Asplenium adiantum-nigrum, A. ceterach* and *A. trichomanes* subsp. *quadrivalens* with more *Athyrium filix-femina* and *Asplenium scolopendrium.*

Leaving Delphi and the sea-loch, Killary Harbour, behind us, we took the road up to Lough Nafooey (L977602), passing *Oreopteris limbosperma* in plenty. *Equisetum fluviatile* was then found for the first time, growing in the lough. Then on to Duffy's Finny, a delightful name for a delightful, tiny Irish tea-room where we stopped for a very welcome cup of tea or coffee with apple pie or banana cake!

The last run for the day took us into limestone country and here we looked at Lough Mask, going down into woods near the Inishmaine peninsula (M1461 and M1561). There were ferns in plenty – on walls, on banks and in the wood – *Asplenium ceterach, A. ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, Dryopteris aemula, D. dilatata, D. filix-mas, Polypodium vulgare* and *Pteridium aquilinum.* The limestone pavement proved fascinating with *Asplenium trichomanes* subsp. *quadrivalens, Dryopteris affinis* morph. *borreri, D. filix-mas* and *Polystichum setiferum* growing in the grykes and the surface of much of the limestone covered with patterns of small depressions and worm-like convolutions that looked like brain-coral. The end of the day was marked by the find of one plant of *Cystopteris fragilis* on a nearby mortared wall and *Polypodium interjectum* in a rocky wood.

On the Monday (15th) we set out to explore the lower slopes of a mountain and a corrie further up, but dense mist rolled in and soft rain fell almost continuously. Plans were changed and the group moved to Achill Island, recording first around a quaking bog at Bunacurry (F707053), where fine *Osmunda regalis* was seen. Next a track was followed down to Dooniver Lough (F726081) and more ferns were recorded – *Asplenium adiantum-nigrum, A. trichomanes* subsp. *quadrivalens* and the usual four species of *Dryopteris* with *Athyrium filix-femina, Blechnum spicant* and *Polypodium vulgare.* An unusual *Asplenium trichomanes* was collected for spore-size measurement.

By Dooniver Strand we stopped for lunch after visiting a further lough where *Elatine hexandra* (6-stamened waterwort) was found, but no aquatic ferns. Then on along the south coast of Achill Island towards Keem Strand following a twisting road that eventually took us along the sides of a mountain, steep slopes above and steep slopes below! This was Croaghaun. Ferns were few along the road, but once down in the valley (F5604) several were recorded – *Asplenium adiantum-nigrum, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* morph. *borreri, D. dilatata, D. filix-mas, Polypodium vulgare* and *Pteridium aquilinum.* Two steep rocky gullies, each with their fast-flowing streams, were then explored (F5504) and these produced *Asplenium marinum, Dryopteris aemula,* rich stands of *Osmunda regalis* and more *Trichomanes speciosum* gametophyte. Perhaps, even, an unusual bracken. The day ended in pouring rain and John and Margaret Collins provided much needed shelter and cups of tea in their motor caravan. The drive back along the 'mountain' road through dense cloud, drifting mist and rain was interesting indeed!

The forecast was for still more rain on the Tuesday (16th) so we took advantage of the dry morning, setting off towards Pontoon once more. It was a pleasure to see the background mountains in full sunlight for the first time. Further on, the roadside ditches (G155080) were found to contain *Equisetum arvense* and *E. palustre* in abundance. In the damp sloping woodland by Lough Conn (G165095) there were many deep flush sites and again it was hoped to see *Dryopteris carthusiana*, but ferns were few – just

Athyrium filix-femina, Dryopteris dilatata, Blechnum spicant and a few epiphytic polypodies. Two very like-minded souls, Kate Pryor and Barbara Porter, stopped at just one tree to investigate the rich lichen-cover – a happy extra, while a slight diversion was made by Clive to consider small rushes in a nearby marsh.

By narrow stony tracks between the peat bogs, south of Nephin, the ditches contained *Osmunda regalis*. Roadside ditches further on supported *Dryopteris affinis* morph. *borreri, D. filix-mas, Equisetum arvense* and *E. palustre*. Then another track came into view – one that had to be followed if we were to reach the gully leading up into Nephin. This we were given permission to use and the final triumph was its negotiation – the roughest steepest farm track in the whole of Ireland? – all of us packed into the Natural History Museum Land-rover with Clive in the driving seat! Leaving the Land-rover, a difficult fence, with a bit of a bog on the other side, had first to be negotiated before making the ascent up Nephin. Then up the gully (G106064), seeing waterfall after waterfall, a struggle, difficult at times, that was rewarded with splendid patches of both *Hymenophyllum tunbrigense, H. wilsonii* and *Trichomanes speciosum* gametophytes in abundance.

photo: A.M. Paul

Elise Knox-Thomas, Graeme Lyall, Megan Dowlen, Barbara Porter, Kate Pryor and Rose Murphy (front) in fern-rich gully on Nephin, Co. Mayo.

In pouring rain we set off for another square where it was hoped that *T. speciosum* gametophyte would again be recorded. This drive took us through a conifer plantation along rough wet tracks, fording deep water that seemed to ask for a photocall with the Land-rover in the middle of the ford! This was on the southern slopes of Birrencurragh (G0101). No *T. speciosum* gametophytes were found, only the ferns *Athyrium filix-femina, Blechnum spicant, Dryopteris dilatata* and *Pteridium aquilinum*. However, beyond this, was the wide Skerdagh river with flush sites on either side (G019003). *Selaginella selaginoides* was listed and two people forded the river to find interesting *D. affinis* types that needed further consideration.

Wednesday (17th), saw an early start – 7.30 a.m. – for a long day in North Mayo. This was to be real square-bashing! *Asplenium scolopendrium* and *Dryopteris affinis* morph. *borreri* were seen on the way to Crossmolina (G11) and a rainbow seemed a good omen for the day. Following a breakfast stop we crossed the River Owenmore (G12) and added *D. filix-mas* and *Osmunda regalis*. As we drove through the Ballycastle square (G13) keen-eyed Alison saw several ferns on mortared walls and hedges and these were duly noted – *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, D. affinis* morph. *borreri, D. filix-mas, Equisetum arvense, Polypodium interjectum* and *Pteridium aquilinum*. In square G14 (Downpatrick head) horsetails were found in greater abundance, *Equisetum arvense* in roadside ditches and *E. palustre* on damp banks and in a *Juncus* meadow. Ferns were added – *Athyrium filix-femina, Dryopteris affinis* morph. *borreri* and *Pteridium aquilinum* on hedgebanks and in ditches, *Asplenium scolopendrium* and *A. trichomanes* subsp. *quadrivalens* on mortared walls, and *A. ruta-muraria* on the Donadoba bridge. The road took us back into G13 and here, near Lackan Bay, at the turning of the road, huge stands of *Equisetum telmateia* were seen, with *E. arvense* on the other side of the road. A search was made for the hybrid, but it was not to be found. *Athyrium filix-femina* and *Blechnum spicant* were added for the square.

Still within G13 a peat-bog track was tackled with some difficulty – the turn needed to get back to the road was considerably more than the required 3-point! However, we were able to add *Osmunda regalis* and *Dryopteris dilatata* before making for Bunatrahir Bay on the way to square G03 where we noted *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, Dryopteris affinis* morph. *borreri, D. filix-mas, Equisetum arvense, Polypodium vulgare* and *Pteridium aquilinum* for the record.

The Céide Fields Centre on the north coast (G0541) was the base for a lunch stop. These fields – 'more than four square miles of farmland trapped in time by the growth of the bog' – are the oldest Stone Age enclosed landscape known in Europe. They date back 5,000 years. Some of us took advantage of the conducted tour to find out more before returning to the Land-rover and the search for ferns. Still within G04 we located a coastal stream that led out to the sea by Glenloss Point (G0241). A local farmer gave us permission to descend it and we soon found that it flowed through a narrow rocky ravine. *Trichomanes speciosum* gametophyte was searched for in many deep crevices within precipitous outcrops but it was not seen though other ferns were found – *Osmunda regalis* by the main river, with *Asplenium adiantum-nigrum, A. marinum, Athyrium filix-femina, Blechnum spicant, Dryopteris aemula, D. dilatata, Equisetum arvense, E. palustre* and *Pteridium aquilinum* scattered at various places – on the rocky outcrops, by the river and on grassy slopes.

The rewarding cliffs of Ben More (F9935) lay after a long walk across a peat bog. Here there were masses of *Hymenophyllum wilsonii* and *Trichomanes speciosum* gametophytes deep within the crevices. Other ferns were scarce – *Athyrium filix-femina, Blechnum spicant* (the most abundant), *Dryopteris aemula, D. dilatata, Polypodium vulgare* and *Pteridium aquilinum*.

As we neared the narrow 'Belmullet' peninsula on the extreme west of North Mayo, ferns became fewer and fewer. In F83 (Pollatomish) only six were seen, these including the very common *Blechnum spicant* and *Osmunda regalis*. Around Belmullet (F73) only four were noted, with even *Blechnum spicant* missing. P63 (Corclogh) produced just three – *Athyrium filix-femina, Equisetum arvense* and *Osmunda regalis*. Moving down, however, to the southerly point, they began to increase again and at Blacksod Point, by Blacksod Bay, with its local black-painted craft, (F61), we were able to record *Asplenium scolopendrium, A. trichomanes* subsp. *quadrivalens, Athyrium filix-femina, Blechnum spicant, Dryopteris filix-mas, Equisetum arvense, Osmunda regalis* and *Pteridium aquilinum*.

It had been a brilliant day, ended by a good meal in an Irish pub, with the long drive back to Castlebar enlivened by Irish music. This we reached at midnight!

On Thursday (18th), there was rain again to start the day. As Anthony Pigott had joined us, we set off once more for Pontoon (our third visit) so that he could check the *Dryopteris affinis* types that we had found there in the rocky woodland (G204039). As a result, four morphotypes were listed – *affinis, borreri, insolens* and *cp. paleaceo-lobata*. A lunch stop was made by the nearby Lough Cullin and here three horsetails were identified growing in the marshy ground behind the shore-line (G212041), *Equisetum arvense, E. variegatum* (upright form) and *E. fluviatile*. The hybrid *E.* x *litorale* might also have been present, but this needed to be confirmed. *Asplenium adiantum-nigrum* was added from rocky slabs between the road and the marsh.

We then drove south, turning off the main road past Lough Nambrackkeagh (G197021) with *Osmunda regalis* and more *Lobelia dortmanna* (water lobelia), to take a track towards Shanvoley and some hills where it was hoped that more *Trichomanes speciosum* gametophyte would be found. Access to the hills was by a rocky stream that ran through dense coniferous forest. The hills were part heather, part moor and part raised bog with rocky outcrops here and there (G1501 and G1601). *Huperzia selago* was added and the hoped-for *T. speciosum* gametophyte. As we returned to Castlebar, a final stop was made by the roadside (M142974). Here *Equisetum telmateia* was abundant and three morphotypes of *Dryopteris affinis* agg. were recorded – *affinis, borreri* and *cambrensis*. To complete the day, one plant of *Oreopteris limbosperma* was found growing low down on a hedgebank by a nearby muddy track.

On the Friday morning (19th) two of us, including the writer of this report, had, very regretfully, to leave. The following account, therefore, is based on notes kindly provided by Alison. The Westport route was followed again, but this time along the Erriff river valley towards the north slopes of Devilsmother (L924654) – a fantastic name! A climb up a grassy hillside was followed by a scramble along the cliffs. Cushions of *Hymenophyllum wilsonii* were abundant and several plants of *Huperzia selago* were seen. Other pteridophytes recorded were *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* morph. *borreri, D. dilatata, Oreopteris limbosperma, Polypodium vulgare* and *Pteridium aquilinum*. Some gametophytes of *Trichomanes speciosum* were eventually located in rock crevices. Scattered along the rock ledges was the attractive *Daboecia cantabrica* (St Dabeoc's heath).

Further west, past Killary Harbour, a lunch stop was made by Kylemore Lough (L75) where, on a nearby roadside bank *Athyrium filix-femina, Dryopteris affinis* morph. *affinis* and *D. dilatata* were seen, also *Polypodium vulgare* growing as an epiphyte on a beech tree. A profitable stop was made near Tullywee Bridge (L728584), where nine ferns were recorded – *Athyrium filix-femina, Blechnum spicant, Dryopteris aemula, D. dilatata, D. filix-mas* and *Asplenium scolopendrium* on the roadside banks with *A. ceterach* and

A. trichomanes subsp. *quadrivalens* on the bridge. Interesting *Dryopteris affinis* types were seen, *D. affinis* morph. *affinis* being common, with *D. affinis* morph. *borreri* and another *D. affinis* form which may be new. Beyond Letterfrack, *Equisetum telmateia* and *Osmunda regalis* were noted by the road and near an old quarry on Cregg (L716533) *Selaginella selaginoides* was abundant. Rocks above the quarry supported *Hymenophyllum wilsonii* and *Asplenium adiantum-nigrum*. A tea-stop in Letterfrack provided the opportunity of adding another fern to the list for L75, this was *Polystichum setiferum*.

The last stop of the day was on the north-east slopes of Tully Mountain (L6762) where Clive found gametophytes of *Trichomanes speciosum* in abundance, carpeting crevices at the back and sides of a large open cave. Roadsides here provided an excellent site for those interested in *Dryopteris affinis* – morphotypes *affinis, borreri* and *cambrensis* were found, together with another form with narrowish, very flat fronds. *Athyrium filix-femina, Blechnum spicant, Dryopteris aemula, D. dilatata, Polypodium vulgare* and *Pteridium aquilinum* were also present.

During the week we had not only visited 25 grid squares but had recorded *Trichomanes speciosum* gametophyte in five of them and had listed 38 taxa including five morphotypes of the *Dryopteris affinis* agg. Our thanks to Clive Jermy for finding so many interesting sites and his explanations on the many differences to note concerning the more difficult plants. Thanks also to Anthony Pigott for such helpful discussions concerning the *D. affinis* group. Finally also to Gerry Sharkey, the BSBI recorder for Co. Mayo (H26 and H27), who gave up his holiday to help us make the most of this splendid field meeting – it was he who knew where we could see the pillwort and who took us to the fascinating limestone pavement by Lough Mask.

NORTH YORKSHIRE – 9-11 September

Ann Robbins

The meeting began on the morning of Friday 9th September with a trip to Pretty Wood, Castle Howard (44/732687), our aim to collect fern roots for an investigation of their arbuscular mycorrhiza. The leader, Jack Bouckley, was unable to attend, having been victim of the surgeon's knife a week earlier, so co-leader James Merryweather took over. Pretty Wood lived up to its name and we found ourselves in 250-300 year old woodland, with sessile oak, sycamore and occasional specimens of English, Turkey and red oak, lime, chestnut and rowan overhead. Along the rides was a springy turf and to right and left bramble, bluebells and a number of common pteridophytes: *Pteridium aquilinum, Athyrium filix-femina, Dryopteris dilatata, D. filix-mas* and *D. affinis* morphotype *borreri* (?). My knowledge of the subject is scant and I was pleased to feel that by the end of the morning I could really distinguish the three *Dryopteris* one from another.

We took a spade to the plants and collected the youngest looking roots, replanting the ferns sampled. Separating the fern roots from those of neighbouring species was tricky. The *D. affinis* was in a ditch of an ancient earthwork, growing in about 4-6 inches of leaf mould and rich humus over almost pure sand. *Athyrium filix-femina* on the other hand was found at a relatively higher altitude where the soil beneath the thin layer of leaf mould was much heavier.

James explained to the group that mycorrhiza are symbiotic associations of soil fungi and the roots of green plant hosts. Most higher plants make these associations and, in many cases, receive nutrients from the soil which they would otherwise be unable to collect for themselves without investing in a large and complex root system. The fungi

photo: J. Merryweather

Richard Unett, Ann Robbins, Dorothy Fortune and Ray Smith examine mycorrhiza at the University of York.

receive photosynthetic products from their host in return. Roots of bluebell, creeping jenny and a grass were taken to provide a comparison with the fern roots, also as a backup, should the fern roots prove too difficult.

After lunch (unparalleled rabbit pie by Nev. Hobson, landlord of The Blacksmiths Arms in Flaxton, who is a BPS member) we took our specimens back to laboratories at the University of York. The roots were washed and then cleared in 10% Potassium Hydroxide at 90°C, the white roots of bluebell, the anonymous grass and creeping jenny for 10 minutes and the fern roots (which were brown and wiry) for 30 minutes. Then 1% hydrochloric acid to acidify the roots, hydrogen peroxide to bleach them and into the stain 0.1% Acid Fuchsin at 90°C. Finally we left the roots in destaining solution overnight. We also had the chance to see *D. affinis* sporangia dramatically dehiscing by examining them under a low (x25) magnification as they dried in the fierce heat of a table lamp.

On Saturday morning the party made microscope slides of the stained roots and could see quite clearly the mycorrhizal fungal structures in the bluebell specimens. The grass and creeping jenny had scraps of fungal mycelium but, rather disappointingly, the fern roots had been reduced to nothing but vascular tissue with a few adherent scraps of cortex. Our vigorous clearing processes, essential to render these end-of-season roots fit for microscopy, had unfortunately disintegrated them! However, our efforts were agreed to be satisfactory for so brief an attempt at laboratory research, and we set off for more usual BPS activity, fern hunting in the wild. It would be really good to be able to repeat the experiment next spring and spend more time trying various techniques.

At Skipwith Common (44/660370), a Yorkshire Naturalists' Trust reserve, are the remains of an abandoned aerodrome where silver birch, sycamore and bramble have colonised the area. We went to a wet area in the broken concrete runway at the edge of which a bright green grass-like plant grew. Closer examination revealed tubular leaves around 3-5cm high and 1mm in diameter emerging from a creeping rhizome. This was *Pilularia globulifera*. We found some sporocarps, hard spherical objects about 1.5-2mm across. JM speculated that these sporocarps could have lain dormant beneath the concrete runway and then grown to form this colony when the correct conditions returned.

After lunch we returned briefly to another area of the common to see *Dryopteris dilatata* and *D. carthusiana* and what may have been the hybrid *D.* x *deweveri*. I learnt nothing if not to be circumspect in the identification of such hybrids. We also saw *Equisetum arvense*. The day was rounded off with a tour of George Smith's beautiful garden at Heslington near the University. Here many varieties of fern grow happily and some of the stock had been in cultivation there for many years. His polystichums and hart's tongues were especially attractive.

Sunday morning began at 10 a.m. in preparation for a visit to our President's local beauty spot, Bilton Gorge (44/320585) which separates Harrogate and Knaresborough. We were joined by Keith Wilkinson of the Nidd Gorge Appeal, set up to purchase and protect this excellent wild place from the proposed dual carriageway and influx of Swiss-style log cabins etc. Well, everyone else may have started then but I was slightly hampered by having waved goodbye to my car keys as they were driven off to Bradford in the back of Richard's car on the Saturday evening. Having regained control of my vehicle on the Sunday morning I caught up with everyone on the disused railway. They had already seen *Asplenium ruta-muraria, A. scolopendrium, Dryopteris filix-mas, D. dilatata, Pteridium aquilinum* and *Equisetum arvense* in among the brambles on either side of the track. It was raining hard as we descended into the gorge and Bilton Beck wood with Keith Wilkinson leading the way. We crossed Bilton beck with few casualties and continued straight up the other side as Keith assured us that the way was now smooth going. We saw *Athyrium filix-femina, Dryopteris affinis* (no-one prepared to name the morphotype this time), *Blechnum spicant* – even I could identify that one growing typically on a soil face overhung by trees. *Polypodium vulgare* was under some fallen trees next to the beck. We crossed the beck at least six more times to my knowledge and each time Keith assured us that it was the last. Our final crossing was on a fallen tree made extra slimy by moss but our intrepid band crossed it no-hands – we were unstoppable. *Polystichum aculeatum* and *Equisetum sylvaticum* were there but not beech fern that Jack Bouckley had sent us in search of. The group decided that the area should be visited again next year to make a more thorough investigation.

In the afternoon we were welcomed with open arms by Jack and Ruth Bouckley at their house nearby. I was amazed to see how many different environments Jack has provided for his ferns in a relatively small space. There is a limestone pavement between the alpine house and the greenhouse, and the latest addition is a shade house where a number of varieties looked very much at home. Jack listened to our account of the weekend and, having been out of hospital for all of six days, declared himself ready to go back down Bilton gorge to show us the beech fern, which we had been fools enough not to find: another reason for returning next year – he'll have to lead us himself then. The weekend was over; I had survived my first national BPS meeting. I felt wiser and paradoxically much more ignorant of the subject. We had seen nothing really unusual except, perhaps, for the *Pilularia* but even the common species can provide areas of interest and opportunities for further study.

REGIONAL MEETINGS 1994

MIDLANDS

A.R. Busby

'Welcome to Spring' Flower Show – 16-17 April. Once again we staged a display of literature and plants which provoked some comment from the show visitors, however, we rarely gain new members from our efforts at these local shows. Gardeners are invited to exhibit in two classes for ferns and there is a third class for foliage plants where ferns can be included. Results were:
Class 160, Three Pot Ferns: 1st – D. Wood (*Adiantum raddianum, A. subpumilum* and *Athyrium nipponicum* 'Pictum'), 2nd – R.J. Smith (*Nephrolepis* sp., *Asplenium australasicum* and *A. bulbiferum*) (4 entries).
Class 161, One Pot Fern: 1st – R.J. Smith (*Platycerium bifurcatum*), 2nd – unknown exhibitor (*Athyrium filix-femina* 'Cristata') (7 entries).

It is difficult to produce ferns of good quality this early in the season so the exhibitors are to be congratulated on staging such good quality hardy ferns. Even the indoor ferns were a credit to the growers.

Ray and Rita Coughlin's Open Day – 5 June. A visit to Ray and Rita's garden is always something to look forward to and once again we were not disappointed. The cool, wet spring had got their ferns off to a good start and the fern walk, the site of the old polytunnel, was a feast of fern fronds. Several members brought along surplus ferns for swapping and most of us went home with some new treasures. Add to that the delightful refreshments that Rita and Ray kindly provided, which gave us yet another day to remember at Lydiate Ash. Our thanks to them both for a very enjoyable day.

John and Margaret Collins' Open Day – 28 August. It is five years since we last visited John and Margaret Collins' garden in Acocks Green, Birmingham and several changes had taken place. The pool area has been reconstructed and several of the borders have been enlarged. It was quite noticeable how their hardy fern collection had increased and matured.

Everyone admired the large *Polystichum setiferum* 'Conspiculobum' by the french windows. The *P. setiferum* 'Plumosum Bevis', recently lifted and divided, were recovering well, much to Margaret's relief. We were particularly puzzled by an unnamed large *Polystichum* of whose origin Margaret is unsure. Its fronds were about 60cm (2ft) long, dark green, not unlike *P. aculeatum* but much more upright and with less setose pinnae. The most striking feature was a small cluster of bulbils near the apex of the frond, in much the same way that *P. andersonii* carries its bulbils. We are quite certain that it is not *P. andersonii*. If anyone recognises the species from my rather poor description, do let us know.

Our thanks to John and Margaret for their kind hospitality which once again included delightful refreshments.

Matt and Margaret Busby's Illustrated Wine and Cheese Party – 28 October. Twenty-two members gathered in the University of Warwick's Senior Common Room at the Westwood Campus for the annual autumn get-together. As usual Matt began the evening with 100 slides, mostly illustrating the Society's activities during 1994. Prominent in the selection were those taken at the Cornish and Edinburgh meetings.

Later, John Collins showed slides of plants and places seen during the BPS visit to Ireland and scenes of Wales on their return. Alan Ogden closed the evening with slides that included a number of hardy fern varieties found in the grounds of a hospital in Dumfries, Scotland. A plant exchange also featured during the evening.

My thanks to Margaret for organising the wide selection of refreshments which fortified members during this colourful review of the past summer, and to the local members for making the evening worthwhile.

LEEDS & DISTRICT

Harlow Carr – 30 April. The Group met at 12 noon in the Study Centre at Harlow Carr Gardens (44/279544) to hold its AGM, to be followed by lunch and an indoor meeting. The occasion was also the Group's 10th anniversary, our first meeting having been held on 18th January 1984. There was a good turn-out of 24 and we were particularly glad that representatives from the new North-West Group were able to be present. We were fortunate to be able to obtain the services of Josephine Camus of The Natural History Museum to lecture to us after lunch; she gave a fascinating talk on 'The Usefulness of Ferns – from Fossils to Fantasy'.

Richard Unett

Southerscale Scar, Ingleborough, North Yorkshire (34/744776) – 25 June. Leaders Richard Unett and Jack Bouckley. On the way up to the limestone pavement we passed various outcrops on which grew lots of *Asplenium ruta-muraria, A. trichomanes, Cystopteris fragilis* and *Dryopteris filix-mas.* The pavement itself, which is privately owned jointly by English Nature and the Yorkshire Wildlife Trust, is very fern rich and we soon found all the above-mentioned forms together with *Asplenium scolopendrium, A. trichomanes-ramosum (A. viride)* and *Dryopteris submontana.* As the search continued we spotted some grassy areas which were covered with *D. affinis, D. dilatata, Athyrium filix-femina* and *Polystichum aculeatum.* In parts of the area *Polypodium interjectum* was abundant and there were also some very luscious pockets of *Gymnocarpium robertianum.*

photo: J. Merryweather

Colt Park, Ingleborough, North Yorkshire

Ron Cole, Jack Bouckley, Eric & Rita Baker, James Merryweather, Richard & Jennie Lamb, Vincent Jones, Patricia Cole, Richard Unett

After lunch at the local hostelry we moved to Colt Park Farm pavement (34/773779). This pavement is protected from sheep so most of the grykes are hidden with a covering of vegetation and the whole of the area is wooded. It had been raining earlier and the early morning fog had not cleared, so conditions were far from good. After about a hundred yards the going became too slippery and dangerous to continue so the search was abandoned. Even so, in that short time, *Asplenium ruta-muraria, A. trichomanes, A. scolopendrium, Cystopteris fragilis, Dryopteris filix-mas, D. dilatata, Polypodium interjectum, Polystichum aculeatum* and *Pteridium aquilinum* were found.

As we walked back to the farm, Mr V. Jones of Middlesborough stopped to photograph a fern in the rock-face. When he looked up to the top of the rock, he spotted a lovely specimen of *Botrychium lunaria* complete with fertile frond. A little more searching revealed a few more within a short distance.

Permits are required for both of these areas.

Richard Unett

Affinis Watch, near Harrogate, Yorkshire – 23 July. In the morning we went to 44/2268 where, apart from the *Dryopteris affinis* which were sent to Anthony Pigott, we found *D. dilatata* and *D. filix-mas*. Along the path at the side of Eavestone Lake were some good plants of *Athyrium filix-femina*, and *Blechnum spicant* was quite numerous in places. There was plenty of *Pteridium aquilinum*. In the afternoon we tackled the 44/2862 area. Here there were few fern species but we found what we were looking for – some *Dryopteris affinis*. The only new find in the afternoon was *Equisetum pratense*.

Jack Bouckley

Derbyshire – 13 August. The meeting place was Miller's Dale (43/142734) in a car park sited at the old L.M.S. Railway Station – but there was no sign of the 'Coronation Scot' – only in spirit! A good number of members were present on what turned out to be a lovely sunny day and it was pleasing to have some new enthusiasts and delightful to have our President, Jack Bouckley, with us. Originally he should have been in hospital but the surgery was delayed at the last moment – the ultimate enthusiast!

The morning walk was intended to be an easy one along the disused railway track in a westerly direction to a sealed-off tunnel. Ambling along the track we soon came across a number of common ferns: *Asplenium ruta-muraria, A. trichomanes* subsp. *quadrivalens, Dryopteris filix-mas, D. affinis* (?*borreri*), *Polystichum aculeatum, Polypodium vulgare, P. interjectum* and, very close to the sealed tunnel, *Cystopteris fragilis*. A small divergence from the track led us into an old limestone quarry, where only a small north-facing rock-face had any ferns – *Asplenium trichomanes*. However, leading from an old limekiln at the edge of the track was a path into another 'secret' quarry where in full sun was a patch of *Ophioglossum vulgatum*.

By this time we were all hungry so some of us (led by our President!) retired for 'pub grub' whilst others had picnics in those lovely surroundings.

Feeling suitably refreshed we left the car park and walked the few hundred yards up the road to Monks' Dale (43/137735). On the steep downward walk into the dale we saw *Asplenium trichomanes, A. ruta-muraria* and *Cystopteris fragilis* on the rocky limestone outcrops. The bottom of the dale is usually wet, but this time it was almost arid. The walk up the dale is about three miles long, the final mile or so being very difficult underfoot and in dense woodland. However, well before the said wood we came across what seemed like acres of *Gymnocarpium robertianum* in limestone screes, quite a sight! At this point most members turned back and arranged for cars to pick up those traversing the wood. The wood revealed some fine specimens of *Polystichum aculeatum* and *Asplenium scolopendrium* as well as the ubiquitous *Dryopteris* species.

All members, new and old, guests and friends, then set off home, satisfied, I think, with what they had seen, but tinged with regret that no *Polystichum setiferum* nor *Asplenium trichomanes-ramosum* had been seen this time – but not for the want of looking!

Ronald Cole

WESSEX

Jim Jarvis

Mendip Hills, Somerset – 3 July. At Charterhouse Mineries (31/505557) little remains of the old lead works except parts of the condensation flues, three ponds and a lot of glassy black slag. The ruins of the flues form short tunnels, five or six metres long, just big enough to walk through. Inside, except in the very darkest recesses, the walls and roofs were covered in *Cystopteris fragilis* with the occasional *Asplenium trichomanes.* Nearby at Ubley Warren we found *A. ruta-muraria, A. trichomanes* and *C. fragilis* growing on the rocks and together with normal plants, a couple of glossy, crowded, pinnate *Polystichum setiferum.*

After lunch we drove to the bottom of Burrington Combe and walked up to the fort on Dolebury Warren (31/450590) then back through the woods to the car park.

During the day we saw *Asplenium ceterach, A. scolopendrium, A. ruta-muraria, A. trichomanes, Athyrium filix-femina, Cystopteris fragilis, Dryopteris affinis, D. dilatata, D. filix-mas, Polypodium interjectum, Polystichum setiferum* and lots of *Pteridium aquilinum* but we didn't find either *Polystichum aculeatum* or *Gymnocarpium robertianum.*

Wye Valley – 6 August. The morning walk across the reserve at Lancaut (31/542964) with the return leg along the top of the cliffs on the Offa's Dyke path yielded a couple of items of note: *Asplenium ceterach* growing on a large boulder and a fine, 'garden worthy', crested *Polystichum setiferum* growing beside the path. I was disappointed by the absence of ferns from the cliff-faces and in the woodland at the foot of the cliffs; it must be the exposure, the dry ground and the hardness of the rock because away from the cliffs the ferns were quite numerous.

After lunch we walked from The Park (31/559994) along Miss Grace's Lane to Beeches Farm and back along the Offa's Dyke path to the Devils Pulpit then across the fields to the car park. Although much of the walk was in open country with few ferns, there were some large *Dryopteris affinis* and *Athyrium filix-femina* on the boundary of the park, with *Dryopteris filix-mas* and *Polystichum setiferum* in the ditch, *Polypodium interjectum* in the wall on the other side of the lane and *Dryopteris dilatata* on both sides. In the woods and on the Offa's Dyke path there were only *Asplenium scolopendrium, Dryopteris dilatata, D. filix-mas* and *Polystichum setiferum* and at Lippets Grove (32/542002) the Martagon lilies, which had been in bud a month before, were over. The fine views and the beautiful weather made up for the shortage of ferns.

The score for the day was: *Asplenium adiantum-nigrum, A. ceterach, A. scolopendrium, A. ruta-muraria, A. trichomanes, Athyrium filix-femina, Dryopteris affinis, D. filix-mas, D. dilatata, Polypodium interjectum, Polystichum setiferum* and *Pteridium aquilinum.*

Wye Valley – 7 August. We met in the car park at Symonds Yat rock and spent a little time looking at a distant and disinterested peregrine falcon before descending to the old railway track by the river. There were plenty of woodland ferns, some of them very large plants, by the track down the hill and on the gentle slope between the railway track and the foot of Coldwell Rocks. There were *Asplenium ceterach, A. ruta-muraria, A. trichomanes* and *Polypodium interjectum* on the garden walls and the supporting walls of the railway track but Coldwell Rocks appeared just as hard, dry and inhospitable as Lancaut, supporting only a few *A. trichomanes.*

We came out of the woods and away from the rocks to eat our lunch. We sat in the sun on the river bank watching dragonflies and canoeists, with a noisy interlude when a flock of long-tailed tits (30+) having crossed the river paused for a moment in the bush next to us before disappearing into the woods. We walked up a long slope to Rosemary Topping, with ferns in the woods and on the walls, into Court Wood, which is grazed bare, along Coldwell Walks and back to the cars.

Stanley Wood, Gloucestershire – 4 September. I was joined by three members of the Gloucester Naturalists and two fern enthusiasts on a dull, overcast, rain-threatening afternoon to walk round Stanley Wood and part of Penn Wood. Not the easiest walk because the paths rarely go in exactly the right direction. Both woods were taken over by the Woodland Trust after somebody had pillaged them, so there aren't many ferns yet. The distribution of the ferns that are there is interesting, with small groups which are probably all the same age, the result of a good year some time in the past, and large areas of apparently ideal habitat with not a fern in sight.

We found *Asplenium scolopendrium, Athyrium filix-femina, Dryopteris affinis, D. filix-mas, D. dilatata, Polypodium interjectum, Polystichum setiferum* and *Pteridium aquilinum*, but surprisingly no *Polystichum aculeatum*. Not an impressive score but no matter, the Gloucester Naturalists were just as interested in snails and flowering plants and architecture and Woodchester Mansion and set-aside as in ferns so I enjoyed myself; I hope they did.

SOUTH-EAST

North-East Surrey – 4 June. Eleven members met at Bolder Mere (51/077585), near Wisley, where recent wet weather had swollen the lake and facilitated colonisation by angiosperms. One small plant of *Pilularia* was found, however, and it is likely that conditions later in the summer will enable extension of the species. Other pteridophytes seen included *Pteridium aquilinum, Dryopteris filix-mas, D. dilatata* (often occasionally abundant and fine), *Athyrium filix-femina* and *Equisetum arvense*.

After lunch taken conveniently near Wisley gardens, where some of us bought specimens of ?*Dryopteris clintoniana* (labelled *D. villarii*), we went to Cobham (51/124596) to see a remarkable stand of *Onoclea sensibilis* growing strongly with hemlock water dropwort (*Oenanthe crocata*) on what had presumably been a site for the disposal of garden rubbish. Someone speculated whether the British Umbellifer Society would do as much damage to the *Onoclea* as we had done to the *Oenanthe*!

The rain now assumed an intensity which must have reminded Andrew Leonard of Portugal as we moved to our final site of the day. Betchworth Chalk Pits (51/205515) have been in existence for many years, and known as an *Ophioglossum* site also for a long time. Unfortunately, landfill is now occurring and the habitat is being severely reduced. We did see *O. vulgatum* (one with a fertile spike) and also some fine *Asplenium scolopendrium*.

Our day finished (as did the rain, just) at Margaret Harris's beautiful garden in Epsom. We were impressed by many things – the borders of *Cystopteris fragilis*, the use of ground cover above which specimen ferns showed to enhanced effect.

Our thanks go to Margaret for a superb cream tea, and to Stephen Munyard for a well researched and fascinating day.

Paul Ripley

Fern Hybrid Workshop, Natural History Museum, London – 3 September. About 16 members met in the Cryptogamic Herbarium of the Natural History Museum for an afternoon of instruction on a subject that has often intrigued and perplexed us on field meetings. After an introductory talk by Clive Jermy, we were able to spend some time using low-power microscopes to identify and confirm features of fern (and horsetail) hybrids.

While some members had brought along some of their own specimens, Clive had collected a number of very good examples which we were able to study. Together with herbarium specimens, we were able to see the abortive spores and shrivelled sporangia of e.g. *Dryopteris* hybrids. Polypodiums were more difficult, but with some practice the irregular size of spores and sporangia became apparent.

This meeting left a lasting impression which will add greatly to our appreciation of specimens found in the field. We are very grateful for the time and careful thought and preparation given by Clive, and for his patient and knowledgeable tuition. Our thanks also to Alison Paul for help with practical arrangements at the Museum.

Paul Ripley

Abbots Wood, Sussex – 17 September. On a crisp autumnal morning around 20 members met in the southern Weald (51/557073) north of Polegate. Rob Cooke, our leader for the day, took us for a short walk into a damp, woody glade where we found *Dryopteris affinis* morph. *borreri, D. carthusiana, D. dilatata* and *Athyrium filix-femina*. Deeper into the forest a lake outflow formed a small deep cut river which revealed *Asplenium scolopendrium* and a fine *Dryopteris affinis* morph. *affinis*.

After lunch at Arlington we went on to David Jacobs' house. His three greenhouses were crammed with fascinating plants including collections of opuntias, willows and alpines. In amongst some of his alpine pans he had many small ferns and beneath the staging was a wealth of larger ferns from all around the world. In the house were ferns growing in many varied places including a splendid terrarium full of filmy ferns in the bedroom. In the lounge was a magnificent collection of cheilanthoid species as well as further terrariums and shelves of ferns.

On the front at Brighton along Madeira Drive, Rob led us to large colonies of *Asplenium trichomanes* and *A. scolopendrium*. In two places along the front wall were a few fine specimens of *Cyrtomium falcatum*.

We would like to thank Rob Cooke for leading the day and David Jacobs for generously allowing so many to go to his house and garden and for providing us with such a splendid tea.

Pat Acock

Battle and Hastings, East Sussex – 1 October. Eleven members met at Fore Wood RSPB Nature Reserve (51/756127), which the group had previously visited under Rosemary Hibbs' leadership in 1989. This typical High Weald sandstone wood has a narrow valley which was visited principally in order to see a beautiful colony of *Dryopteris aemula* growing on the steep west bank near the head of the small ravine. The 1987 gale had not damaged the colony, only made access more hazardous! Other plants found included *D. filix-mas, D. dilatata, D. carthusiana*, possibly *D.* x *deweveri, D. affinis* morph. *borreri* and possibly *robusta, Blechnum spicant, Polystichum setiferum, Athyrium filix-femina* and *Pteridium aquilinum*.

We trebled the number of customers at the Inn at Crowhurst but found the landlord welcoming and accommodating.

What a selection of treats Mark Border had arranged for us at his home in Hastings! We started by dividing into three groups for a thoroughly entertaining and extremely well planned and researched treasure hunt. This took us all over Hastings, where we found various treats including *Polypodium interjectum* (two very good sites), *Asplenium ruta-muraria, A. trichomanes, A. scolopendrium, A. adiantum-nigrum* (all these growing in walls), and some 'planted' *Osmunda regalis, Onoclea sensibilis*, plus *Selaginella* and a crested *Athyrium* which I missed. I didn't manage to reach the site near Ore, but the highlight for me was Roar Gill (near the 'T' in St Helen's Road), a steep gorge full of marvellous specimens of *Polystichum setiferum, A. scolopendrium* and *Blechnum spicant* (among other goodies – this site merits further exploration).

The next 'T' was at Madeira Drive, where Mark's family had prepared a superb spread for us. We also enjoyed Mark's garden, which had a young but very interesting collection. I particularly liked the *Woodwardia orientalis*, with its coppery-pink foliage and small plantlets appearing from the upper surface of the fronds, *Hypolepis punctata* 'Beddomei', and *Pteris cretica* 'Albo-lineata' planted in a small wall.

Thank you, Mark, for an exceptionally well planned and interesting meeting.

Paul Ripley

Great Comp Gardens / Indoor Meeting – 29 October. Twenty of us met at this magnificent garden on the greensand south of Borough Green, Kent, where we met the garden's creator, Mr David McClintock. Together with his late wife he bought this late Tudor house with its much diminished estate of a few acres to establish a garden. Upon his retirement the garden was increased to eight acres by buying two paddocks. An interesting collection of plants has been assembled including geraniums, rhododendrons, many choice conifers and other trees all set in interesting niches. Although ferns seem to have a natural affinity for the garden and its walls, a range of ferns, including some choice species, have been added to increase the variety and these have established themselves well in both the wooded and wet areas of the garden.

Following the garden visit members descended on 'Acock Towers' to dig out copious quantities of horsetails and a few ferns, to the great joy of the lady of the house. After some tea, slide-shows on British ferns, the Azores, Italy and Cornwall were presented by Rob Cooke, Graham Ackers, Lesley Williams, Paul Ripley, Andrew Leonard and Jennifer Ide. Thanks go to Steve Munyard for providing booksales and to Emma, Louise, Anne and Grace for providing tea.

Pat Acock

South-East Essex – 24 July. Seven members assembled in the morning at Galleywood Common (52/702025), near Chelmsford. We crossed a long disused horse-racing track to explore the nothern part of the common which is now wooded and has much bracken. We descended to a wetter part where there is still a colony of *Equisetum sylvaticum* and were delighted also to find several plants of *Dryopteris carthusiana*. Ferns throughout the rest of the wood were very scarce, and we only found a few young plants of *D. dilatata*, a few *D. filix-mas* and *Equisetum arvense* on our return walk.

One of the morning's participants was Gerald Downey, a long standing member, who very kindly invited us back at lunch-time to see his fern collection a few miles away. This was a marvellous bonus as he has been growing ferns for many years and has an interesting well tended collection, some grown from BPS spores and others collected abroad by Christopher Fraser-Jenkins amongst others. The ferns were grown in pots in a cold frame, others were planted in the garden and some were found in pots in an unheated greenhouse.

In the afternoon we were joined by the Craddocks to visit Tim Pyner's garden at Westcliff-on-Sea near Southend. His small front and back gardens contain the best collection of Australasian plants I have seen in a private garden. Every available space was filled with unusual plants and good use was made of sinks. Ferns which some would consider of borderline hardiness were thriving, including *Paesia scaberula*, *Blechnum fluviatile*, *Onychium japonicum*, *Hypolepis* sp., *Doodia media*, *Pyrrosia lingua*, *Phymatosorus diversifolius* and *Dryopteris sieboldii*. Amongst the many interesting plants in the back garden was *Phyllocladus trichomanoides*, a conifer whose 'leaves' are stems.

Many thanks to Tim for organising the day and for the hospitality shown to us.

Cambridgeshire – 4 September. In the morning six of us assembled to explore the National Trust reserve at Wicken Fen (52/563705), near Ely, which we had visited five years before in the first year of our local group. The first area we looked at near the wind pump was now more overgrown with herbage so that we only found a few plants of *Dryopteris filix-mas*, *D. dilatata* and *D. carthusiana*. *Athyrium filix-femina* was not seen so may have been crowded out. Nearby, *Thelypteris palustris* extended over a wide area, surviving the competition of the tall herbage, but more vigorous in areas where it had been cut back. We explored three further areas: the first was wooded but had no ferns, the second near a hut was also wooded and had plants of *Dryopteris carthusiana* and *D. dilatata* near the edge and more *T. palustris* on the bank outside. The last area, recently cut, yielded a large thriving and photogenic area of *Thelypteris*. Walking back we passed yet another small area of marsh fern; it is clearly abundant in its separated localities.

After lunch we made our way to Brian Cox's wholesale nursery at Waterbeach Fen. Here two more members joined us and we were able to see the nursery ferns looking in good condition. Brian is mainly a shrub and tree specialist, propagating his own stock, but the wholesale ferns have become a profitable side-line. Everybody found plants to buy and Anthony Pigott was delighted to find a pot of *Ephedra*, not often for sale in a nursery. We next drove to Milton, where Brian's wife, Jennifer, fed us a magnificent tea and Brian showed us the interesting trees, shrubs and ferns, well labelled, planted in their small garden backing onto the country park. Many thanks to Brian and Jennifer for their hospitality.

East Suffolk – 2 October. In the morning, accompanied by Peter Lawson and Graham Peck from the Suffolk Wildlife Trust, seven of us visited Reydon Wood (62/480788), now a SWT reserve near Southwold. This attractive ancient wood has a good flora including orchids and a rare sedge. Ferns, however, were few and far between. We saw some handsome scattered plants of *Dryopteris dilatata*, a few *D. filix-mas*, but were unable to find *D. carthusiana*, previously recorded. *Pteridium aquilinum* was present outside the wood in the lane and in one other area. Our main success story was to rediscover *Polystichum setiferum*, a few small plants near the location of a large plant recorded some years ago but which had died out.

In the afternoon we visited the magnificent garden of John and Diana Morley at North Green, near Stoven. John is a very knowledgeable plantsman, best known for propagating snowdrops, but he also has a fine fern collection. We were scarcely inside the gate before seeing a superb *Asplenium scolopendrium* 'Crispum'. Ferns were found throughout the garden, but a ditch proved the ideal setting for further interesting scollies. John had acquired fine *Polystichum*, polypody, lady fern and scolly varieties, mostly from Reg Kaye and Wisley (the former Cranfield collection). Diana very kindly provided us with tea while John showed us the results of twin-scaling snowdrops. Our thanks to them both for a most interesting visit.

Cambridge Social – 6 November. Our final event of the year will be the annual social gathering at Margaret Nimmo-Smith's house when members enjoy a fern slide-show, a quiz and much chat about ferns and books.

NORTH-WEST

Borrowdale – 4 June. The first meeting of the North-West Group of the BPS, involving thirteen members, took place near Grange-in-Borrowdale on a fresh sunny day in early June.

From the Bowder Stone car park (35/252168) members walked north up the road to Grange Bridge, taking the opportunity to compare various common ferns, notably *Dryopteris affinis, D. filix-mas* and *Pteridium aquilinum.* The first named was looking at its best, the yellow green of its unfurling croziers looking particularly striking at this early stage of the season. Round the corner from Grange Bridge was a fine slate wall with a number of plants of *Asplenium trichomanes, A. ruta-muraria* and *A. ceterach.* Following several weeks of comparatively rainless weather the latter was looking rather dry and withered, the fronds having inrolled exposing scaly lower surfaces. The wall housed a small colony of *Polypodium interjectum* 'Ramosum'.

The lane leading up to Borrowdale gave members further opportunities to observe common species including fine examples of *Athyrium filix-femina* and *Dryopteris dilatata.* Further along the first plants of *Cryptogramma crispa* were seen, followed by many specimens of *Oreopteris limbosperma.* Where the track runs close to the River Derwent freshly flushed *Gymnocarpium dryopteris* was admired. Nearby were healthy specimens of *Blechnum spicant. Asplenium scolopendrium* and a small patch of *Phegopteris connectilis* were growing on the edge of the track. The slate rocks looked ideal for filmy ferns but only a small colony of *Hymenophyllum wilsonii* was seen, looking typically moss-like. Further up the valley the highlight of the day was found, a small but healthy colony of *Asplenium septentrionale* growing on steep rock with several freshly flushed light green fronds. After lunch the party descended the dale seeing on route more fine populations of *Gymnocarpium dryopteris* and *Oreopteris limbosperma.*

Members finished the day in Nan Hicks' garden where there were many plants of all descriptions to examine and admire. The tea and biscuits kindly provided by Nan added to the attractions. On the way back to the cars some ferns with many of the characteristics of *Dryopteris oreades* were examined, though the site was well below the height at which this fern generally occurs (240-610m according to Page, *Ferns of Britain and Ireland*). Finally, while crossing Grange Bridge a small quantity of *Asplenium ceterach* generally thought to have been lost in repointing was found. The expedition ended in bright sunshine a little after 4 O'clock.

Mike Porter

Eskdale – 5 June. Upper Eskdale runs rather unexpectedly east-west. Its southern flank combines qualities to produce a rare habitat: north-facing, high rainfall, woodland cover, granite boulders and outcrops. On those rocks grow filmy ferns. Ten members of the group met there to see them.

In the dramatic gorge of Stanley Gill, which cuts that southern flank, we found *Hymenophyllum wilsonii*. In the more open woods there were some fine patches of *H. tunbrigense*, which in the Lake District only occurs in this area. Oddly, so far as we could discern, they do not trespass on each other's patch. It was still an unusual opportunity to contrast and compare. The distinguishing features which struck us were: (1) *H. wilsonii* tended to have narrower fronds; (2) the fronds of *H. wilsonii* tended to stand away from the rock, whereas *H. tunbrigense* lay closer to it; (3) the decider – the sorus of *H. wilsonii* was rounded, but that of *H. tunbrigense* was toothed.

We also saw the usual woodland ferns including *Gymnocarpium dryopteris* and *Phegopteris connectilis* and some stands of mainly the *Dryopteris affinis* span (what a cop-out that word is for merely aspirant pteridologists) which looked positively tropical. We did not see *D. carthusiana* or *D. aemula* (although we looked very hard – it does occur, though rarely, in this area). We wondered if we saw *D. expansa* and *D.* x *deweveri* but *D. dilatata* was as versatile as ever and may have fooled us.

Robert Sykes

Waithman Nurseries, Silverdale, Lancs. – 21 June. An evening visit took place to the garden and nursery established by Reginald Kaye in Silverdale. The group of 26 members were duly welcomed by Dominic Kaye, who, along with his mother and brother, intends to keep the nursery running after the loss of both his father and grandfather.

We were taken into the fern garden where members saw a wealth of green treasures and were told of the intention of refurbishing the garden and adding other shade-loving plants as the weedy areas are cleared. *Asplenium scolopendrium* 'Nobile' was well established here, a fine 'scolly' produced at Bolton's Nursery in the near-by village of Warton. Emily Bolton, who at a spritely 92 still has her family's tradition of enthusiasm for hardy ferns, joined the group for part of the evening. Some Asiatic ferns of note in this area included *Dryopteris wallichiana*, the brown-scaled form and a delicate red-stemmed *Osmunda japonica*. Several plants of crisp and crested bracken were seen and *A. scolopendrium* 'Crispum Moly', another good scolly.

Dominic then took us to another part of the garden where, under the canopy shade of a group of sycamores, a new development was taking place. Here the core of the fern collection was being brought together with new groups of plantings from divisions of established plants in the rest of the garden. More treasures were here with unusual forms of *Athyrium, Dryopteris* and *Polystichum*, including the original clones of *Athyrium filix-femina* 'Acrocladon' and 'Victoriae'. A plant Emily Bolton was pleased to see was *Polystichum setiferum* 'Depauperatum Tripinnatum Superbum Bolton', a gardener's nightmare trying to get its name on a label but never-the-less a beautiful form.

We were then shown an area where ferns were being propagated, both by spores and vegetatively. Of interest was Dominic's partial success with leaf-base culture of scollies which brought a lot of discussion from the group.

The group left knowing that fern growing at Waithman Nurseries will be continued in the traditional manner with the interest and enthusiasm of the Kaye family. This enthusiasm rubbed off on us all and I'm sure we all learned a great deal from the visit.

Malcolm Hutcheson

Sizergh Castle and Brigsteer Wood, Cumbria – 7 August. Members of the North-West group of the BPS met at Sizergh Castle on a warm Sunday morning and were welcomed by Malcolm Hutcheson, Head Gardener and custodian of a vast collection of *Osmunda, Cystopteris, Asplenium, Dryopteris* and others. He gave us a brief history of the garden, telling us that Lord Strickland's rock garden had been laid out by Hayes of Grasmere in 1929, and that in the 1970s he, Malcolm, had become involved with Kew and Wisley and the North-West group of the NCCPG with a view to there being a National Collection of ferns at Sizergh. He expressed the hope that some of our group would help him to catalogue the ferns for the NCCPG during the winter, as the National Trust at Sizergh was very short-staffed.

We were then conducted on our Grand Pteridological Tour. In the Nursery Yard we admired *Osmunda regalis* 'Crispa', then gathered round a large frame carefully shaded from the sun by fine green netting. This was unveiled to reveal potted ferns in mouth-

photo: T. Piearce

Peter Hindle, Jack Garstang, Malcolm Hutcheson, Marjorie Garstang, Les Dugdale, Cynthia Kelsall and Bernard Pollock beside *Osmunda* at Sizergh Castle, Cumbria.

watering variety. From these we turned our attention to a stunning collection of hardy ferns growing in the open in a long border under the wall along one side of the nursery yard. The famous Rock Garden was next, with its meandering, undulating paths through banked beds of large limestone rocks, in which grew more ferny delights – including a fine specimen of *Osmunda gracilis* – happily enjoying the company of acers, hardy geraniums and luxuriant clumps of gentian and other rock garden denizens.

After a very enjoyable bar lunch at the Strickland Arms, Malcolm met us for a post-prandial walk down the ancient track of Ashbank Lane to Brigsteer Wood – a magical place full of interesting plants. On the way we saw *Dryopteris dilatata, D. affinis* and *Pteridium aquilinum*. We moved rapidly down the steep, wooded limestone hillside to the valley below and south along a butterfly corridor which had been carved out on either side of the path through the trees. By a farm track *Equisetum arvense* was discovered growing in the verges. We then ascended back up through the woods and across the fields on Cinderbarrow to our cars.

All of us were most grateful to Malcolm Hutcheson for giving up his day off to share with us his remarkable knowledge of natural history, and to show us his huge collection of hardy ferns gathered over the years from many parts and displayed for our delight. I hope we will be permitted to return on another visit.

Nan Hicks

Great Asby Scar – 24 September. Fourteen members led by Mike Porter assembled at the quarry car park (35/627098) for field study on Great Asby Scar. This is a very exposed area of deeply eroded limestone pavement, rising to a maximum height of 412m, with many grykes up to two metres deep. Average annual rainfall at nearby Shap Village is 1,519mm (59.8 inches) (British Rainfall Statistics (Met. Office) 30 year average).

Seen from the car park the main area appeared totally devoid of vegetation but the presence of sheep showed there must be something growing up there. We were not disappointed and were soon examining *Cystopteris fragilis, Asplenium ruta-muraria, A. trichomanes* and *A. trichomanes-ramosum* (*A. viride*) as we made our fairly steep ascent. It was apparent that the latter far outnumbered *A. trichomanes* and as we approached the top *A. trichomanes* almost disappeared. This perhaps indicates that on really exposed sites the 'cut off' height for *A. trichomanes* may be lower than the figure of 800m given in Jermy and Camus (*Illustrated Field Guide* p. 107). As expected, *A. scolopendrium* flourished abundantly, with some very well grown specimens and three examples of a 'crested' variety were noted. Only rather stunted specimens of *Athyrium filix-femina* and *Dryopteris filix-mas* were found but *D. affinis* morph. *cambrensis* was well represented.

One of our two main hopes had been to study *Gymnocarpium robertianum* and this we discovered in abundance, in all stages of development. Our second task was to seek *Dryopteris submontana*. After some hard searching several good specimens were found. As this is listed by Jermy and Camus as "very rare" we thought we had done well. Perhaps the most pleasing find for many of us, though, was the occurrence of superb specimens of *Polystichum aculeatum* often deep in grykes with fronds of 80 to 90cm. They were perfectly sheltered from the searching wind and rain which finally sent us back to our cars. Pleasingly, only a few plants of *Pteridium aquilinum* were found.

Peter Hindle

Holehird, Windermere, Cumbria – 29 October. Membership of the Group now stands at over 40, 25 of whom were present at this first AGM. The preceeding reports show the success and popularity of our first year's activities. A competition was held and the winners were: (a) Best potted fern – R. Sykes, (b) 'Fern taxon' – M. Porter. Tea was provided on a 'Jacob's join' basis and an enjoyable meeting closed at 4.15 p.m.

Peter Hindle

LANCASHIRE & CHESHIRE

Inaugural Meeting – 19 March. On this Saturday afternoon six local people met with Matt Busby at Adlington Civic Hall near Stockport, to discuss restoring the regional group in the Lancashire/Cheshire area. After a helpful discussion and good sensible advice from the Secretary, we decided to go ahead with the project and planned three meetings for 1994. In spite of the fact that there were so few present on the day, we had many more letters promising support in the future. It was also good that Nigel Hall, who had been involved with the old group, was willing to help in some capacity again. After refreshments, Matt gave us a slide-show and we left, well satisfied that we had at least made a start.

Barbara Porter

Indoor Meeting at Nigel Hall's House, Hazel Grove, Stockport – 4 June. We invited Dr Trevor Piearce of Lancaster University to lead a discussion about the history of the BPS and the involvement of some local pteridologists, such as the Stansfields of Rossendale, in the story. It turned out to be a fascinating discussion between Nigel and Dr Piearce, both of whom showed some of their Victorian fern books and artefacts. Mrs Hall had provided delicious refreshments and we finished a very interesting meeting by holding a plant sale. Some of us had brought various ferns and plants, but the main attraction was a walk around Nigel's garden looking at his ferns. He had a spade in hand and every step or two would say "Do you want some of this?" Most of us went home well satisfied with our haul, particularly of polypodies.

Barbara Porter

Newbiggin Crags and Farleton Fell, Lancashire – 2 July. As an alternative to a planned excursion to Hutton Roof Crags which had of necessity been cancelled, four members and a botanist guest paid a more leisurely visit to Newbiggin Crags and Farleton Fell (34/547797). Starting from the Hutton Roof to Clawthorpe road at 34/550787, the route was northwards across the crags to the summit which provides an excellent view towards Morecambe Bay and the Cumbrian Mountains. From the summit the group walked on to Farleton Fell and returned via the western edge of the crags.

Whilst no unusual pteridophytes were found, most of those expected on limestone were seen. The grykes provided the usual four *Asplenium* species: *A. trichomanes* subsp. *quadrivalens*, *A. ruta-muraria, A. trichomanes-ramosum* and *A. scolopendrium*. *Polystichum aculeatum* often mimicked *P. lonchitis*, but alas the latter was itself not found. There were several patches of *Gymnocarpium robertianum* and on the higher area *Dryopteris submontana* thrived.

The return journey revealed that *Cystopteris fragilis* was happy on the western edge of the exposed limestone. Away from the limestone, *Pteridium aquilinum* and the odd *Blechnum spicant* completed the count.

Eric Baker

Cwm Idwal, Gwynedd (23/643592) – 3 September. It rained! I must admit my spirits rose when I saw five people waiting for me by the information centre at Llyn Ogwen, but in the end, because of the weather and infirmities, only three of us set off. We went up the path towards Devil's Kitchen, by way of a canyon cut in the rock, leading off the main path and heading up towards the right hand side of Llyn Idwal. Almost immediately we found *Asplenium trichomanes*, probably subsp. *quadrivalens*. We then came across *Dryopteris filix-mas, D. dilatata* and *D. affinis* subsp. *affinis*. *Athyrium filix-femina* was there in the damp corners and futher up the rock were many plants of *Dryopteris oreades*. It was good that it was growing near *D. filix-mas* and we could see the differences between them. There were also some rather small plants of *Polypodium vulgare*.

We couldn't find a definite path when we came out onto the hill above, so we wandered in slight drizzle towards the lake and Cwm Idwal. This helped us to find our first clubmoss, *Diphasiastrum alpinum* and later, along the banks above the lake, we found two others, *Huperzia selago* and *Lycopodium clavatum*. We even found all three together, which was a good opportunity to examine the differences, especially as they were all fertile. There was also *Blechnum spicant* near small rocky outcrops, mostly quite tiny and putting out new growth, even in September. As we got nearer the slopes we found abundant *Cryptogramma crispa* among the rocks.

When we got to the scree area, we peered hopefully under many a large boulder at the ledges and hollows underneath where I had once found *Woodsia alpina* – 15 years ago, but never since. We didn't find it this time either, but did spot *Gymnocarpium dryopteris*, *Phegopteris connectilis*, and probably *Dryopteris expansa* too, lurking in various cracks and crevices.

On the way back round the other side of the lake we looked into it hopefully for *Isoetes lacustris*, but the water was very high and the wind was disturbing the surface so we couldn't see the bottom clearly. The last fern we saw that day, near the end of the path by the stream, was *Oreopteris limbosperma*. We had been out in the rain and drizzle for over four hours, though it actually stopped while we had lunch! However, I, for one, thought it was worth it. I hope Mr and Mrs Haskins did too and weren't just being polite.

Barbara Porter

THE AMERICAN FERN SOCIETY INC.

The AFS wishes to extend an invitation to readers of this Bulletin to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their general knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum*, the scientific quarterly *American Fern Journal*. Membership costs $11.00 and $20.00 per annum, respectively, including overseas postage ($14.00 and $31.00 if airmail postage required). For particulars please write to Dr Richard L. Hauke, 456 McGill Place, Atlanta, Georgia 30312 USA. Prospective members residing in Great Britain should write to Miss A.M. Paul, Dept. of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD.

MALVERN SPRING SHOW – 6-8 May **A.R. Busby**

With the Malvern Hills as a back-drop, the Three Counties Showground is the venue for the Malvern Spring Show and the sun shone to welcome our first Society stand at this increasingly popular event. Our stand, some 12 feet square, displaying literature and plants, was on similar lines to our regular stand at the Southport Show but with far more potted ferns. May is rather too early to have a wide selection of hardy ferns to exhibit so we relied heavily on some well grown indoor ferns to furnish the stand. These included large specimens of *Platycerium bifurcatum, Lygodium japonicum, Phlebodium aureum* and *Asplenium bulbiferum*. Clive Brotherton kindly loaned 15 well grown examples from his *Cheilanthes* collection and Ray Smith set up a display of hardy ferns at the front of the stand which included examples of *Asplenium scolopendrium* varieties, *Polystichum setiferum, Cystopteris dickieana, Athyrium filix-femina* and aspleniums.

Malvern Spring Show has one competitive class for ferns: Class 45, one hardy fern in a pan or pot. The prize-winners were:
1st – R.T. Dudfield (*Athyrium nipponicum* 'Pictum'), 2nd – G.A. Dudfield (*Dryopteris erythrosora* 'Prolifica'), 3rd – N. Thomas (*Adiantum pedatum* 'Imbricatum') (7 entries).
The standard was not very high and I hope that some of our members will exhibit in this class which would raise the quality of the exhibits.
There is also Class 2, which is a display of plants measuring about 1m x 0.5m x 0.5m high. This was won by Mr C. Barnard for a very good display of hardy ferns. All the more notable because of the quality of his ferns so early in the season. Class 27 is for one pot plant grown for foliage effect. Although two ferns were entered in this class, namely a *Nephrolepis* and a *Davallia*, various pot plants noted for their colourful leaves took the prizes. However, it is worth noting that the *Davallia* was given a 'reserve award'. There is no reason why well grown ferns could not take the honours in this class in future years.

The show proved to be well worth the time and effort involved; we had many promising enquiries about membership and actually enrolled three new members. A couple of weeks after the show the Society received a cheque for £25 having received an award from the show organisers. I would like to express my appreciation to those members who called in at the stand to say hello, and my sincere thanks to John and Margaret Collins for transporting a van load of ferns to and from the show, to Ray and Brenda Smith who not only provided ferns but manned the stand unaided all day Friday, and to Clive and Doreen Brotherton for allowing us to use many of their *Cheilanthes* collection and for spending two days on the stand with me.

SOUTHPORT FLOWER SHOW – 18-20 August **A.R. Busby**

Due to the imminent hospitalisation of our President, Jack Bouckley, the Society's stand looked rather thin and without its wide variety of potted ferns that often presents to the gardening public their first glimpse of the many forms and varieties that can be grown in British gardens. Thankfully, Ray Smith brought along a huge selection of cut fronds from his garden which, added to my own contribution, furnished the stand with its usual greenery. As in previous years, we provided a display to show how to grow ferns from spores, with the usual display of Society literature and the sale of Society publications.

After last year's encouraging increase in the number of exhibitors in the competitive ferns classes, there was a slight reduction in numbers. Jack's absence from this year's show exacerbated the situation. In spite of this the overall quality of the exhibits was good and there has been a marked improvement in presentation. However, exhibitors still fail to realise the importance of good plant 'grooming', thus losing points with dead or damaged fronds.

As usual, A.R. Busby and R.L. Godard-Key were the judges. The prize winners are listed below.

Class 6	Individual Championship: Four hardy, two greenhouse, two foreign hardy ferns: 1st I. Rawson, 2nd R.J. Smith, 3rd E.A. Gibbs (3 entries)
Class 7	Three Hardy British Ferns (dissimilar): 1st R.J. Smith, 2nd E.A. Gibbs (3 entries, 1 disqualified)
Class 8	Three Foreign Hardy Ferns: 1st E.A. Gibbs, 2nd R.J. Smith (2 entries)
Class 9	Three *Polypodium* (distinct varieties): 1st E.A. Gibbs (1 entry)
Class 10	Three *Polystichum* (distinct varieties): 1st E.A. Gibbs (2 entries, 1 disqualified)
Class 11	Three *Athyrium*: (1 entry, disqualified)
Class 12	Three *Asplenium* (excluding *A. scolopendrium*): 1st B. Russ, 2nd R.J. Smith, 3rd E.A. Gibbs (3 entries)
Class 13	One British Fern (any kind or variety): 1st E.A. Gibbs, 2nd O. Fairclough, 3rd R.J. Smith (5 entries)
Class 14	One Greenhouse Fern: 1st S.J. Houghton, 2nd E.A. Gibbs, 3rd R.J. Smith (4 entries)

The 'Happiland' Trophy, awarded to the exhibitor gaining the most points in the fern classes, was won by Mrs E.A. Gibbs.
Some of the most notable plants exhibited were Mr Houghton's *Lygodium japonicum* grown on bamboo trellis and which proved very interesting to the public and Mrs Gibbs' superb *Davallia* sp. grown in a hanging basket. However, to my mind, the best exhibit in the fern classes was Brian Russ's three aspleniums.

My thanks to Libby Gibbs and Ray and Brenda Smith for assisting me on the Society's stand and to the many members who called at the stand during their visit to the show. I welcome any enquiries about exhibiting ferns at Southport Show and will advise on the identification, growing and presentation of the exhibits.

OBITUARIES

PROF. DR KARL ULRICH KRAMER 1928 - 1994

A personal comment

Karl Kramer was born in Charlotteburg, Berlin on 17 October 1928. I know little of his early life but his fern career began when he spent nine months at Missouri Botanical Garden studying new World *Lindsaea* under Rolla Tryon. He continued this study at Utrecht University and was awarded a doctorate for it (published in 1957). The genus remained his 'first love' and he subsequently wrote the treatment of the '*Lindsaea* Group' for *Flora Malesiana.*

I first met Karl in 1963 on a short trip to Leiden and Utrecht. Of that trip I remember only that he was wearing a beret (in Dutch, a 'baret') which, I am told, is worn only by poor farmers and professors! Two years later he came to London and I was keen to return his hospitality. As he was going to stay near my home in Kew I thought it would be nice to surprise him by meeting the boat train. However, I arrived at Liverpool Street Station just

photo: K. Rasbach

as the train had emptied and I viewed with dismay a large mass of passengers on the main concourse. How could I search for a face I hardly remembered? Then, from a vantage point on the stairs, I saw the beret and we made contact. We drove to Kew and I invited him in for coffee. As we walked up the garden path to our flat a foraging hedgehog curled up in front of us. Karl suggested it should be a surprise for my wife, only recently arrived rom Australia, and he lifted the animal into his baret and bore it into the house! A life-long friendship began as we supped coffee, heggie sitting between us on his haunches like a dog, enjoying the heat from the fire. We never met frequently, but my children remember Karl and his wife Margrit's kindness when we stayed with them for an action-packed week in 1978 – barbecues amongst *Dryopteris affinis* and an introduction to 'schoelbak', a game we still love to play.

Karl was unhappy about how plant systematics was being developed at Utrecht after the retirement of Prof. Lanjouw, and in 1974 was elected a Professor of Systematic Botany at Zürich University. Here he built up the herbarium and made several trips, sometimes with his wife, or with Emil Zogg and Helen Gastner, to Taiwan, Réunion, Amsterdam Is., India, Seychelles, Kenya and China to collect ferns. He was a good teacher and encouraged students from abroad to study at Zürich. Latterly he had turned his attention to monographing *Pteris,* but his study and understanding of the morphology and relationships of pteridophytes as a whole gave him a breadth held by few of his generation. His skill as a diplomatic editor was renowned and two major works for which he was responsible were the new edition (1984) of Hegi's *Illustrierte Flora von Mitteleuropa: Pteridophyta* and the pteridophyte volume of *Families and Genera of Vascular Plants* (1990).

I was in Geneva last May and visited the Kramer's home near Zürich, sad to see my 'old friend' (as he always signed his letters) for what we both knew would be the last time. Although Karl had difficulty in keeping his train of thought, his conversation was sprinkled with those puns which showed his complete understanding of our language and English humour. He will be frequently and long remembered.

[A full obituary and list of Kramer's publications will be published in *Taxon* in 1995.]

Clive Jermy

PROF. DR JAN KORNAŚ 1923 - 1994

It was with great sadness that we heard that our member Prof. Jan Kornaś died on 8th August after a short illness. He was the author of numerous works in plant taxonomy, particularly ferns of East Africa, phytogeography, ecology and nature conservation. He was Professor of Botany at the Jagellonian University in Krakow, and Director of the Institute of Botany there until his retirement in 1992. He encouraged many students to study ferns both in Poland and Africa. He leaves a wife, Anna Medwecka-Kornaś, and four children, to all of whom we send our condolences.

Clive Jermy

MEMBERSHIP LIST: ADDITIONS AND AMENDMENTS

NEW MEMBERS 1994

ADAMS, Mrs P., 2 Brickyard Cottage, Abbey Cwmhir, Llandrindod Wells, Powys LD1 6PG, Wales
ALLEN, Mr J.G., 98 St Margaret's Road, Hanwell, London W7 2HF
BEAUMONT, Mr V.G., 529/531 Lytham Road, Blackpool, Lancs. FY4 1RF
BIRCH, Mr M.A., 4 Langton Way, London SE23 7TL
BLADON, Dr S.J., 25 Mayland Close, Heybridge, Maldon, Essex CM9 7YR
BLAKE, Mr J.K., Low Rise, School Road, Bressingham, Diss, Norfolk IP22 2AD
BRAIN, Mr C.T., 11 Park Edge, Harborne, Birmingham, West Midlands B17 9ER
BRAIN, Mr M.P.A., 15 Overhill, Pill, Bristol, Avon BS20 0JZ
BRIDGES, Miss K.M., Newmachar House, Newmachar, Aberdeen, Grampian Region AB2 0RD, Scotland
BRIGHTWELL, Mr R., The Old School, Drinkstone Road, Hessett, Bury St Edmunds, Suffolk
BROWN, Miss T.K., 11 Nicholas Street, York, North Yorks. YO1 3EQ
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CROWE, Mr J.P., Kellys Cottage, Tredilion, Abergavenny, Gwent NP7 8BB, Wales
CROWTHER, Mr & Mrs D. & N., 16 Heyworth Street, Derby, Derbys. DE33 3DL
CUERDEN, Mr J.F., c/o Yew Tree House, High Street, Ripley, Woking, Surrey GU23 6BE
DELAHAYE, Miss M.F.D., 19 Lindsey Street, Epping, Essex CM16 6RB
DICKERSON, Mr D., No. 7 Grafton Underwood, Kettering, Northants. NN14 3AA
DICKSON, Mrs J.D., c/o The Croft, 34A Teignmouth Road, Holcombe, Dawlish, Devon EX7 0JE
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EGAN, Miss J.H., 43 Springfield Road, Sheffield, South Yorks. S7 2GE
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WILLIAMS, Mr I.G., Erw Laj, Ffordd Iago, Groeslon, Caernarfon, Gwynedd, Wales
WRIGHT, Mr B., 130 Prince Rupert Drive, Tockwith, York, North Yorks. YO5 8PU

MEETINGS 1995

Meetings Secretary: A.C. Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P.J. Acock, N.J. Hards, J.M. Ide, A.C. Pigott, P.H. Ripley

Sat 4 March – **Spring Indoor Meeting – Reading**
Location: Plant Science Laboratories, Whiteknights, University of Reading
Leaders: Anthony Pigott / Stephen Jury
Time: 11.00

Fri 5 - Sun 7 May – **Malvern Spring Show: BPS Stand**
Location: The Three Counties Showground, Malvern
Further Info: Matt Busby

Sat 27 May – **Day Indoor Meeting – Coventry**
Location: Warwick University, Dept of Science Education, Canley, Coventry
Leader: Matt Busby Time: 11.00

Fri 30 June - Sun 2 July – **Long Weekend Field Meeting – South West Wales**
Leader: Rob Cooke
Centre: Abergwaun Hotel, Fishguard
Times: 09.30 each morning

Thurs 17 - Sat 19 August – **Southport Flower Show: BPS Stand**
Further Info: Matt Busby

Fri 8 - Sun 10 September – **Long Weekend Field Meeting – Eskdale, Lake District**
Leader: Robert Sykes
Centre: (see full meetings programme sheet)
Times: 09.30 each morning

Sat 23 - Sun 24 September – **Weekend Field & Gardens Meeting – Devon**
Leader: Matt Busby
Centre: George Hotel, Axminster, Devon
Times: 09.30 each morning

Sat 7 October – **Annual General Meeting & Autumn Indoor Meeting – Kew**
Location: Royal Botanic Gardens, Kew, Surrey
Leader: Pat Acock Time: 11.00

Sat 21 - Sat 28 October – **Week Field Meeting – Madeira**
Leader: Graham Ackers
Centre: Estalagem do Mar, Sao Vicente

Sat 20 - Sun 21 Jan 1996 – **Winter Indoor Meeting – Tenbury Wells**
Leader: Graham Ackers Time: 11.00
Centre: Kyre Park, Tenbury Wells, Worcs.

For full details of these and other meetings of interest to members, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

REGIONAL MEETINGS

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Wessex	J.E. Jarvis, Vermont, Jubilee Road, Nailsworth, Stroud, Gloucs. GL6 0NG
Midlands	A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD
Leeds & District	J.H. Bouckley, 209 Woodfield Road, Harrogate, Yorks. HG1 4JE
South-East England	P.H. Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia	Mrs M.E. Nimmo-Smith, 201 Chesterton Road, Cambridge CB4 1AH
North-West England	Mrs M. Garstang, Overbeck, Pennybridge, Ulverston, Cumbria LA12 7RQ
Lancashire & Cheshire	Mrs B. Porter, 1 Hazel CLose, Marple, Stockport, Cheshire, SK6 7QT

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HARDY FERNS
R.N. Timm
The Fern Nursery, Grimsby Road, Binbrook, Lincolnshire LN3 6DH
Please send stamped addressed envelope for list

1995 SOUTHPORT FLOWER SHOW
The organisers extend all good wishes for a successful 1995
Classes for your Society's special interests are available
17th, 18th, 19th AUGUST 1995
Schedules and further information from:
The Flower Show Secretary
44 Hoghton Street, Southport, Merseyside PR9 0PQ

The British Pteridological Society
BULLETIN

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THE BRITISH PTERIDOLOGICAL SOCIETY

BULLETIN

VOLUME 4 NUMBER 6

1995

Edited by A.M. Paul

THE BRITISH PTERIDOLOGICAL SOCIETY
Officers and Committee from October 1995

President: Dr T.G. Walker
President Emeritus: J.W. Dyce, MBE

Vice-Presidents: J.H. Bouckley, J.A. Crabbe, Dr C.N. Page, M.H. Rickard, J.R. Woodhams

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Plant Exchange Organisers: R.J. & Mrs B. Smith,
184 Solihull Road, Shirley, Solihull, Warwicks., B90 3LG

Booksales Organiser: S.J. Munyard, 234 Harold Road, Hastings, East Sussex, TN35 5NG

Trustees of Greenfield and Centenary Funds: Dr T.G . Walker, A.R. Busby, A.M. Leonard

The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and available literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette, Pteridologist* and *Bulletin,* are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist,* topics of more general appeal, and the *Bulletin,* Society business and meetings reports.

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £15, Personal Members not receiving the *Fern Gazette* £12; Student Members £9; Subscribing Institutions £25. Family membership in any category is an additional £2. Applications for membership should be sent to the Membership Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £5 extra to cover bank conversion charges.) Airmail postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50.

(Front cover: *Marsilea quadrifolia,* a water fern with appeal for those in the Aquatic Pteridophyta Special Interest Group. Illustration from: A.J. Eames (1936) *Morphology of Vascular Plants: Lower Groups.)*

Back numbers of the *Gazette, Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St. Mary Cray, Kent BR5 3LJ, from whom further details can be obtained.

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THE
BULLETIN
OF THE
BRITISH PTERIDOLOGICAL SOCIETY

Vol. 4 **1995** **No. 6**

SECRETARIAL NOTES

ANNUAL GENERAL MEETING 1996, PRELIMINARY NOTICE – The 93rd AGM will take place on Saturday 12 October 1996 at the University of York at 2.00 p.m.

COMMITTEE VACANCIES – In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. Nominations are invited from members of the Society to fill these vacancies at the Annual General Meeting in 1996. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating their willingness to serve, should reach the General Secretary by 9 September 1996.

SUBSCRIPTIONS 1996 – Members are reminded that subscriptions for 1996 are due on the 1st January 1996 and should be paid to the Membership Secretary, British Pteridological Society, c/o Dept. of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover. Standing Order forms are available from the above address.

PUBLICATIONS BY AIRMAIL – Our journals can be sent by airmail to overseas members, provided they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

AFFILIATION TO THE ROYAL HORTICULTURAL SOCIETY – Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. There is one transferable ticket available for all RHS Shows other than the Chelsea Flower Show. Applications for tickets or further details, enclosing a stamped, addressed envelope, should be made to the BPS General Secretary.

READING CIRCLES – The Society operates a reading circle for several journals. The *American Fern Journal* is a quarterly publication containing much information for those seriously interested in ferns; it is accompanied by the *Fiddlehead Forum*, which publishes many 'ferny' items of interest to the amateur grower. The Royal Horticultural Society's journal, *The Garden*, is published monthly. To receive any of these journals apply to the General Secretary.

THE GREENFIELD FUND – This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Awards for meritorious achievements such as the introduction of a new fern variety or plant, or some of the Society's publicity projects would be considered as worthy of help from the fund. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support will not therefore be eligible for help from the fund. Members with projects wishing to benefit from this memorial fund should apply to the trustees via the General Secretary.

THE CENTENARY FUND – This fund is used to promote the study of all aspects of pteridophytes – horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to avail themselves of this fund should contact the trustees via the General Secretary.

BACK NUMBERS OF JOURNALS – Back numbers of the Society's journals are available to members at reasonable prices. Many of the older journals are running out and are best obtained while stocks last. Patrick is able to offer the *Bulletin* vol. 2 minus part 2 for £4 including postage as a special offer again. A full list is available from Pat Acock, 13 Star Lane, St Mary Cray, Kent BR5 3LJ.

SPECIAL INTEREST GROUPS – Three Special Interest Groups were formed in 1995: Aquatic Pteridophyta, Tree-ferns and Foreign Hardy Ferns, and a fourth group for those interested in filmy ferns is planned for 1996. For further information please send a stamped addressed envelope to the organisers:
Aquatic Pteridophyta: Miss J.M. Ide, 42 Crown Woods Way, Eltham, London SE9 2NN.
Tree-ferns: M.H. Rickard, Kyre Park, Kyre, Tenbury Wells, Worcs. WR15 8RP.
Foreign Hardy Ferns: A.R. (Matt) Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.
Filmy Ferns: S.J. Munyard, 234 Harold Road, Hastings, East Sussex TN35 5NG.

BPS VIDEO 'BRITISH FERNS' – With over fifty species of ferns the British Isles has a remarkably varied fern flora. Many species have distinctive distributions reflecting regional variations in environmental conditions. In particular the cool, relatively damp environments of the North and the mild Western fringes of Britain bring together species typical of Atlantic, Arctic and Alpine regions, resulting in a fern flora that is unique to the British Isles.

This twenty-five minute video shows most of our native ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.

The video was funded by Schering Agriculture and the National Museum of Wales. It is available for loan, free of charge, to interested individuals and organisations. For further details write to the General Secretary enclosing a stamped addressed envelope.

MEMBERS INFORMATION SERVICE – It is often the case that members require information and advice on many aspects of their interest in Pteridophytes but are often reluctant to ask or simply do not know where to obtain help. Queries from members on any aspects of the biology, identification or cultivation of ferns or fern allies should be sent to the Hon. Gen. Sec. accompanied by three first class stamps.

ANNUAL GENERAL MEETING 1995

MINUTES of the 92nd Annual General Meeting held at the Royal Botanic Gardens, Kew, Richmond, Surrey on Saturday 7th October 1995 at 2.15 p.m.

IN THE CHAIR: The President, Dr T.G. Walker.

PRESENT: R.G. Ackers, P.J. Acock, E.J. & R. Baker, R. Beauchamp, J.H. Bouckley, A.R. Busby, J.M. Camus, R. Cooke, M. & L. Craddock, T. Craddock, H.L. Davies, A. Dickman, P.J. Edwards, N. & E. Hards, R. Hibbs, A.E. Hoare, K. & D. Holly, A.M. Leonard, H.W. Matthews, J.W. Merryweather, R.J. Murphy, A.M. Paul, A.C. & M. Pigott, G. Stark, J.R. Woodhams.

ITEM 1 – APOLOGIES FOR ABSENCE: J.A. Crabbe, J.W. Dyce, I. Little, A.C. Jermy, H.S. McHaffie, M.E. Nimmo-Smith, C.N. Page, B. Porter, P.H. Ripley, R. & B. Smith, B.A. Thomas.

ITEM 2 – APPROVAL OF MINUTES: Minutes of the 91st AGM held on the 15th October 1994 had been published in the 1994 *Bulletin* and were approved.

ITEM 3 – MATTERS ARISING: There were none.

ITEM 4 – REPORT OF THE HONORARY GENERAL SECRETARY:

MEETINGS: The Society has enjoyed another busy year and I have received good reports of this year's field meetings. I was unable to attend all the BPS meetings but was fortunate enough to attend the Holttum Memorial Pteridophyte Symposium at Kew in July. This gave us the chance to spend time with members both old and new among the overseas delegates. The organisers are to be congratulated on an excellent conference and the field and garden tour organised by C.N. Page was very successful. It is hoped that a similar tour can be planned in the near future.

REGIONAL GROUPS: I regret to report that the recently formed local group in the Greater Manchester area has closed due to the ill-health of its organiser, Barbara Porter. We wish Barbara well in her continued recovery. Due to personal circumstances I was unable to organise a programme for the Midlands area but I hope that we shall be operating again next season. I am pleased to report that the other regional groups have continued to flourish and members are urged to support them. Addresses of regional organisers are listed on the current meetings programme.

MEMBERSHIP: The Membership Secretary, Alison Paul, informs me that we have enrolled 74 new members so far this year, but that figure must be set against the loss of 34 members due to deaths or resignations. Our total membership stands at 762.

PLANT AND SPORE EXCHANGE SCHEMES: Ray and Brenda Smith continue to perform sterling work with the Plant Exchange Scheme. The 1994/95 list provided 80 species and forms offered by 19 donors. The latest information indicates that the next list, due out soon, will be even longer.

Margaret Nimmo-Smith has had another extremely busy year with the Spore Exchange. Once again, thanks to the hard work and generosity of the donors, Margaret was able to produce a list containing over 800 species and forms. Some members have expressed concern that they have to wait several weeks between sending their list of requirements and receiving their spores. Margaret is aware of their concern and endeavours to process their requests as quickly as possible. However, due to her increased workload and family commitments, there is inevitably a delay, but all spore requests are completed in strict rotation.

The Spore Exchange has benefited from a grant of £1,000 from the Stanley Smith Horticultural Trust towards the purchase of a new computer. A proper database for the spore exchange is now being developed.

SPECIAL INTEREST GROUPS: This past year has seen the formation of three special interests groups: one for those with an interest in aquatic ferns and fern allies organised by Jennifer Ide, a Tree-fern Group organised by Martin Rickard and a Foreign Hardy Fern Group organised by me. Jennifer informs me that she has 17 members subscribing to her group, Martin has six interested members and I am pleased to report that 16 members have subscribed to the Foreign Hardy Fern Group. Members interested in taking part in any of these groups should contact the respective organisers.

CONSERVATION: A year ago the Society established the post of Conservation Officer and appointed Rob Cooke to the position. I append his first report:–

This is the first year in which the Society has had a Conservation Officer in over 100 years of existence and does, I believe, reflect the generally growing concern with the environment. Certainly it has been a busy year. Much work has gone into the production of various reports produced jointly with other conservation bodies such as the Botanical Society of the British Isles and the Wildflower Society. Notable amongst these is the second edition of Biodiversity Challenge, a document compiled jointly by many non–Governmental Groups challenging the Government's approach to the 1992 Earth Summit (The Rio Convention on Biodiversity).

Our Society is now formally represented on Plantlife Link (a committee of representatives of all the botanical societies), and also the Joint Nature Conservation Committee plant working group.

Other work currently underway includes the production, again jointly with the BSBI, of an updated Code of Conduct for field visits. This will include lists of plant species especially protected by law, and outline the responsibilities of all if our flora is to be conserved.

There will also be a 'conservation corner' in the *Pteridologist* where current fern conservation issues and debates can be aired.

If anyone would like further details of any of this work then please do get in touch. The Conservation Officer's address can be found on the inside front cover of our journals.

MERCHANDISE: During the past year, Mick and Linda Craddock have taken over the Society's merchandise sales from Anthony Pigott and they report a busy year so far. Our warmest thanks to Anthony for so successfully launching and maintaining this service to members.

I have received reports of several members who have suffered ill-health during the year, notably Brian Russ, a stalwart of the Alpine Garden Society and long associated with the exhibiting of ferns at Southport Show, who has had two heart attacks and has been very poorly, Brenda Smith who recently broke an arm, and Clive Jermy who suffered several injuries during fieldwork on the Isle of Mull. We wish them and all other members at present suffering ill-health a speedy recovery.

If I may end on a personal note, may I take this opportunity to thank all my friends in this Society for their kindness and compassion during my dear wife Margaret's illness and death this year. It was a great comfort to me and my family.

The President thanked Mr Busby for his report which was approved and adopted by the meeting.

ITEM 5 – REPORT OF THE HONORARY TREASURER: Dr Hards presented to the meeting copies of his balance sheet for 1994/95 and reported little change in income. Changes in journal production such as printing from disk have gone a long way to reducing costs but due to extra pages, administration and postage has gone up accordingly. Dr Hards was pleased to report that both the Greenfield and Centenary funds retain a healthy balance.

On closing his report Dr Hards apologised for having been unable to get the balance sheet audited. This was due largely to being without a computer for several days immediately prior to this meeting.

The Treasurer's report and accounts were approved subject to auditing and the President thanked Dr Hards for his report.

ITEM 6 – REPORT OF THE HONORARY MEETINGS SECRETARY: Usually this report marks the end of the year's activities, but this year there are still two meetings to look forward to: the visit to Madeira later this month and the 'Hardiness' workshop in January 1996. Anthony Pigott reported on another busy year with most meetings well attended. There had been some confusion about the starting times of meetings and he explained that the dates given on the Meetings Programme now relate to full days in the field and do not include the prior evening. All this is explained on the Meetings Programme.

Outlining next year's programme, he hoped it would include meetings in Norfolk, Argyll, Kew and Derbyshire or Yorkshire.

The meeting adopted the report and Mr Pigott was thanked by the President.

ITEM 7 – REPORTS OF THE EDITORS: *Bulletin* – Alison Paul, commenting on the late appearance of the 1994 *Bulletin,* emphasised the importance of the early submission of meetings reports so that publication of the journal is not delayed.

Pteridologist – James Merryweather was pleased to report that he was able to publish the 1995 *Pteridologist* on time in early May and that due to the Edinburgh Conference report, it was larger than usual. Copy for the next issue is already at hand. He hinted at exciting new plans for the next issue which hopefully will include colour photographs. Mr Merryweather closed his report with a plea to the membership to 'keep writing!'.

Fern Gazette – Dr Barry Thomas sent his apologies for not being able to give his report personally but provided the following report:–

Volume 15 part 1 was rather late being published. For this I apologise and take full blame for trying to do too many other things at the same time.

Volume 15 part 2 should be published during November. We are receiving more than enough copy to fill two parts a year and all papers submitted are reviewed. The new system of printing from disk has both speeded up the production and reduced the cost. The Index for Volume 14 is being worked on and will be ready for publishing at the same time as Volume 15 part 2. All the parts have been scanned in and are now being checked and cleaned up prior to computer indexing.

The President thanked the Editors for their reports which were approved by the meeting.

ITEM 8 – ELECTION OF OFFICERS AND COMMITTEE:

Election of Officers: It was reported by the Secretary that both A.R. Busby and A.C. Pigott were willing to be re-elected as Honorary General Secretary and Honorary Meetings Secretary respectively, but it was with regret that he had to report that

Dr N. Hards was resigning as Honorary Treasurer after eight years. The President thanked Dr Hards for so ably looking after the Society's finances during difficult years and asked the members to extend their warmest thanks which they did with much applause. It was proposed by Dr Hards and seconded by A.R. Busby that Andrew Leonard be elected as the Society's Honorary Treasurer. It was proposed by A.M. Paul, seconded by P.J. Edwards and agreed by the meeting that all three Officers be elected.

Election of Committee: The two longest serving members of the Committee due to retire were R.G. Ackers and N. Schroder. In addition, a third vacancy arises due to A.M. Leonard's election as Hon. Treasurer. The following three candidates were elected to the Committee: Wg. Com. Eric Baker, nominated by A.R. Busby and seconded by M.E. Nimmo-Smith, Josephine Camus, nominated by A.R. Busby and seconded by M.H. Rickard, and Margaret Nimmo-Smith, nominated by M.H. Rickard and seconded by A.R. Busby. The remaining Committee members are R. Cooke, J.M. Ide, A.C. Jermy, H.S. McHaffie, S.J. Munyard, P.H. Ripley and G. Stark. It was proposed by M. Craddock, seconded by J.M. Camus and agreed by the meeting that they be re-elected.

Election of Editors: The Editors of the *Fern Gazette* – Dr B.A. Thomas, J.A. Crabbe and Dr M. Gibby, the *Pteridologist* – J.M. Merryweather, and the *Bulletin* – A.M. Paul were standing for re-election. It was proposed by R. Cooke, seconded by J.H. Bouckley and agreed by the meeting that all three Editors be re-elected.

ITEM 9 – ELECTION OF HONORARY AUDITORS: Both G. Hoare and R.J. Smith were standing for re-election. It was proposed by J.R. Woodhams, seconded by A.M. Paul and agreed by the meeting that they be re-elected.

ITEM 10 – ANY OTHER BUSINESS:
As there was no further business the President closed the meeting and thanked the members for attending. He also extended to A.R. Busby the most sincere condolences of members at the sad loss of his wife, Margaret Busby, on the 3rd May this year.

The meeting closed at 3.00 p.m.

A.R. Busby
Hon. Gen. Sec.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1994

ORDINARY ACCOUNT

(1993)	**INCOME:**	
£10,096.77	SUBSCRIPTIONS	£10,869.59
91.84	INTEREST	83.91
200.00	BOOKSALES	200.00
17.00	SPORE EXCHANGE	
749.42	MERCHANDISE	127.75
266.10	PLANT SALE	
100.00	SUNDRIES	81.00
94.00	SYMPOSIUM BOOKS	
£11,615.13	**TOTAL INCOME**	£11,362.25

	EXPENSES:	
£1,913.00	PTERIDOLOGIST	£1,569.00
2,993.00	GAZETTE	2,160.75
1,787.00	BULLETIN	1,578.00
997.76	PRINTING & STATIONERY	365.00
2,271.50	ADMINISTRATION & POSTAGE	2,450.33
29.15	SUBSCRIPTIONS TO SOCIETIES	30.15
10.00	PLANT & SPORE EXCHANGES	115.88
96.00	MEETINGS	482.25
408.24	MERCHANDISE	1,013.09
1,399.18	CENTENARY SYMPOSIUM	
£11,904.83	**TOTAL EXPENSES**	£9,764.45
	BALANCE FOR 1994	£1,597.80
	BROUGHT FORWARD FROM 1993	£4,420.34
	PUBLICATIONS ACCOUNT	−£2,000.00
	CARRIED FORWARD AT 31.12.1994	£4,018.14

CENTENARY FUND

BROUGHT FORWARD FROM 1993	£5,221.38
INTEREST	169.26
GRANT	−125.00
WORLD OF FERNS	20.00
CARRIED FORWARD AT 31.12.1994	£5,285.64

GREENFIELD FUND

BROUGHT FORWARD FROM 1993	£1,751.70
INTEREST	56.79
CARRIED FORWARD AT 31.12.1994	£1,808.49

PUBLICATIONS ACCOUNT

BROUGHT FORWARD FROM 1993		−£849.20
RECEIPTS	- Offprints	148.20
	- Special Publication No. 1	191.50
	- Special Publication No. 2	77.50
	- Special Publication No. 3	343.50
	- Special Publication No. 4	12.00
	- Special Publication No. 5	19.50
SUNDRY		10.10
BALANCE		−£46.90
ORDINARY ACCOUNT		£2,000.00
CARRIED FORWARD AT 31.12.1994		£1,953.10

Notes to the Accounts

1. The Society had the following stocks of books at 31.12.1994 (1993 stocks in brackets): *Guide to Hardy Ferns* 3 (46), *Fern Names and their Meanings* 297 (21), *Cultivation and Propagation of British Ferns* 322 (410), *History of British Pteridology* 863 (865), *BPS Extracts & Papers* 463 (466).

2. Interest arises on 31st March on the Centenary and Greenfield Funds. No provision has been made for accrued interest.

3. Small floats were held by two officers at 31.12.1994. These are not included in the accounts.

4. The accounts reflect the subscriptions actually received in the year. Approximately £1,850 is subscriptions received in advance for 1995 but some subscriptions remain outstanding for 1994.

5. The Society's assets include a share in a computer and software at The Natural History Museum cost £1,000.

6. BPS Booksales had assets of £3,550.51 at 31.12.1994.

7. The Centenary Fund had 198 copies of *A World of Ferns* at 31.12.1994.

LECTURE MEETINGS AND DAY VISITS 1995

SPRING INDOOR MEETING, READING – 4 March. For the first meeting of 1995 we were guests of the Department of Botany at the University of Reading.

In the morning members were able to examine a selection of beautifully preserved herbarium sheets and other fascinating memorabilia of Mrs Katherine Murray Lyell (1817-1915) which had been presented to the University in 1925. This impressive collection of *c.*2,500 specimens formed the basis for her book, *The Geographical Handbook of Ferns*, published in 1870, which was also on display. She herself collected plants in the Ganges Delta, Assam and the Khasia Hills and was sent specimens by Hooker and other eminent botanists of the day. After lunch Dr Stephen Jury gave an interesting talk about her work.

This was followed by Hugh Corley, recently made an honorary member of the Society, who talked about his original pioneering work in the male fern group, now some thirty years ago, which led to the recognition of their systematic complexity, especially amongst the taxa known as *Dryopteris affinis*. Hugh explained the shorthand formulae that he used to represent the possible ancestral genome combinations in the group. As knowledge of these taxa has increased, much of Hugh's original conclusions, made without the benefit of modern genetic analysis techniques have been shown to be correct. It was fascinating to hear how Hugh had observed the structure of variation at a time when most people were still having trouble distinguishing *D. affinis* from *D. filix-mas*. Hugh concluded by talking of his latest ideas about the *D. dilatata* group where, yet again, things may not be as simple as they appear....!

At the end of the day, members were again able to tour the exhibition, supplemented by a computer running an identification and analysis program written by Anthony Pigott to enable the development of reliable methods to identify taxa in difficult groups such as the *D. affinis* complex. In such groups there are often many overlapping characters which make the use of a conventional dichotomous key impracticable and unreliable. By the use of probability techniques, the cumulative effect of several characters can be taken account of, producing a result that can show that there is a very high probability of the specimen being a particular taxon. Anthony also handed out the latest version of his table of diagnositc characters for the *D. affinis* morphotypes.

It was a very mixed, interesting and well attended day. Many thanks are due to Dr Stephen Jury and his colleagues who organised the meeting and provided the refreshments.

Margo Pigott

WARWICK UNIVERSITY FERN SHOW – 27 May. Twenty-eight members assembled in the Science Building at Warwick University, Westwood Campus for a day of talks, plant sales and a fern show.

Members spent the morning viewing the small outdoor fern borders in the demonstration garden before retiring to the greenhouses where our leader for the day, Matt Busby, had prepared a display of *Adiantum* species and varieties. The tropical greenhouse provided a home for several fern species and forms which were mentioned in the report of last year's meeting in Warwick (*BPS Bulletin* **4**(5): 191).

During the morning several members staged their ferns in the four classes devised by Matt. It was disappointing that only seven members entered the competitive classes, however, we hope to repeat it next year. I thought the standard was very high and when I found out there were CASH prizes, I was kicking myself for not entering. If you are anything like me, you probably think that you are not good enough at growing ferns to exhibit them, but you probably have one or two that could stand examination. Start grooming your prize plants for next year!

The judge was Clive Brotherton and the results were:
Class 1 – One Pot Fern (any kind or variety)
1st Mrs E.A. Gibbs, 2nd Mrs D. Holly, 3rd Mr R.J. Smith
Class 2 – Three Pot Ferns (any kind or variety)
1st Mr R.J. Smith, 2nd Mrs B. Smith, 3rd Mrs E.A. Gibbs
Class 3 – One *Equisetum* (any kind or variety)
1st Miss J.M. Ide (two entries)
Class 4 – One Aquatic Fern (*Azolla, Salvinia* or *Marsilea* only)
1st Miss J.M. Ide (one entry)
The winners shared £42 in prize money.

During lunch members raided a ‘Bring and Buy Fern Sale’ which raised £91 for the Society and provided the prize money for the fern show.

After lunch members enjoyed a talk by Matt Busby on exhibiting ferns in competitive classes. Matt was in good form and performed the strange task of making us feel a deal of sympathy for the pedantic, idiosyncratic, demonic and megalomanic character of a plant judge.

Clive Brotherton then gave a talk on *Cheilanthes*, showing us some examples of ferns that he has grown. To say that Clive is an expert grower is something of an understatement. He should probably be described as a fern magician. He grows ferns in John Innes compost no. 2 with 50% grit. At this time of year they are watered most days with tap water which in his area is naturally acid. He uses a low-nitrogen feed. They are kept outside in summer and inside in winter, but not too humid. James Merryweather asked Clive to write an article for the *Pteridologist*, which he seemed a bit reluctant to do; those people who know Clive really ought to apply some pressure on him. He has a wealth of knowledge and this short article cannot do him justice.

Thanks are due to Brenda Smith and Doreen Brotherton for taking charge of the refreshments, Sue Pierce and Derek Seary for looking after the fern sale, Ray Smith for taking charge of the meeting during the morning, and especially to Matt Busby for organising the day.

Andrew Leonard

AUTUMN INDOOR MEETING, KEW GARDENS – 7 October. Whilst the committee were holding forth, a small number of us gathered for a packed programme arranged with great care by Peter Edwards. We were firstly whisked into the Library where a former librarian, Ray Desmond, gave us a talk on the history of nature-printing from its earliest days until it was eclipsed at the turn of the century. Kew has a wealth of books which we were able to inspect at close quarters and Ray gave out a nature-printed illustration of his own to each one gathered.

Peter gathered us back together for a slide-show illustrating the variety of the living fern collection at Kew. The slides had been professionally taken and Peter was able to show us the small details of ferns that Professor Holttum used to implore his students to look at.

At lunch-time we were able to look at the beautiful laminated prints of the ant-ferns *(Lecanopteris)* that had been on display at the Holttum Memorial Symposium.

After the AGM, Peter was joined by Josephine Camus and they led us around the Princess of Wales Conservatory where we were able to find many of the species illustrated in the morning slide-show. Next we visited the Filmy Fern House and then went on to the Lower Nursery, house 38. Here Josephine spoke about *Selaginella* and the Marattiales, using the specimens to illustrate her points, and referring to her many adventures in the tropics. She then showed us the group of *Lecanopteris* species which had been assembled for the Holttum Symposium and told us of the problems of collecting specimens in the wild which are always ruthlessly defended by their accompanying ants. Peter finally took us to the Banks Building for a small taster of the uses pteridophytes have been put to. Here we were shown a large number of fascinating artifacts from the Economic Botany collections – baskets to cans of croziers to bottles of chemicals produced from ferns.

Our thanks go to Peter Edwards for arranging such a pleasurable day and to Josephine who, though far from well, spoke to us about the living collections.

Pat Acock

photo: M.L. Pigott

Rob Cooke, Rose Murphy and Barbara Porter with *Dryopteris affinis* in Pembrokeshire.

NATIONAL FIELD MEETINGS 1995

PEMBROKESHIRE – 30 June - 2 July

S.J. Munyard

The meeting was based at the Abergwaun Hotel, Fishguard. Owing to confusion regarding the starting day of the meeting, only two members and the leader, Rob Cooke, met in the hotel bar on Thursday evening. The following morning we were joined by Anthony and Margo Pigott with their eight week old son Charles who was attending his first meeting.

We met at Pencelli Forest SSSI (22/1239) where Alison Wheeler, the warden, led us through the deciduous woodland. We followed a circular route recording fern species as follows: *Asplenium adiantum-nigrum, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* morphotypes *affinis* and *borreri, D. dilatata, D. filix-mas, Polypodium vulgare s.s., Polystichum setiferum* and *Pteridium aquilinum*. We followed the river valley of Pencelli Fawr recording additionally *Dryopteris carthusiana, Polypodium interjectum* and a thriving colony of *Ophioglossum vulgatum*. This is an interesting site as the *O. vulgatum* grows in deep woodland, an unusual habitat for the species. We then returned to the cars and went to a public house at Nevern Bridge for lunch.

The afternoon was spent exploring Gwaun Valley Woods at Lower Fishguard (12/9736). We followed the path alongside the river into the steep, wooded valley with a number of rock outcrops. Species recorded were *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, Athyrium filix-femina, Blechnum spicant, Dryopteris aemula, D. affinis* morphotypes *affinis, borreri, paleaceolobata, robusta* and *'insolens', D. dilatata, D. filix-mas, Oreopteris limbosperma, Polypodium interjectum, P. vulgare, Polystichum setiferum* and *Pteridium aquilinum*. We then returned to the cars and met at the hotel in the evening. Other Society members had now arrived, increasing the group size to seventeen.

Saturday morning was spent exploring sites in Gwaun Valley. We gathered at Garn Wood (12/9935). A short time was spent exploring the roadside verge before descending an overgrown winding track to the riverside where the party split and moved in opposite directions. Those of us walking eastwards were lucky enough to find boulders and the rock-faces of an old quarry covered with large colonies of *Hymenophyllum tunbrigense*. Other species recorded at this site were *Asplenium adiantum-nigrum, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* morphs. *affinis* and *borreri, D. dilatata, D. filix-mas, Polypodium interjectum, Polystichum setiferum* and *Pteridium aquilinum*.

After returning to the cars a short drive took us to Pont Faen (22/0233). This site is a steep north-facing wooded slope. Species recorded were *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* morphs. *affinis, borreri* and *robusta, D. dilatata, D. filix-mas, Polypodium vulgare s.s.* and *Pteridium aquilinum*.

By now everybody was ready for lunch and we drove to a hotel for refreshments. Lunch over, we moved to Cwm Bach (22/0435). This involved a steep climb up a wooded stream valley with small waterfalls. A search was made for gametophytes of *Trichomanes speciosum*, but none were found. Species recorded were *Asplenium scolopendrium, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis* morphs. *affinis, borreri* and *cambrensis, D. dilatata, D. filix-mas, Polypodium vulgare, Polystichum setiferum* and *Pteridium aquilinum*. Having exhausted most of the party with the difficult walking in hot weather, the majority returned to their lodgings. Four of us visited one further site, open moorland on Preselli Hills SSSI (22/1035). We were hoping to confirm an old record for *Lycopodiella inundata* but all of the normally boggy areas were dry due to the lack of rain, and no clubmosses were recorded.

Sunday morning was spent exploring the cliffs at Strumble Head. The group assembled at 12/8941, the early arrivals being lucky enough to see a pair of grey seals in the sea between the Head and the lighthouse. The coastal path was followed in a south-westerly direction, recording *Asplenium marinum* growing in some quantity on sheltered rock-faces by the sea and one colony growing on rocks adjacent to the path. Other species noted were *Athyrium filix-femina, Dryopteris affinis* morph. *borreri, D. dilatata, D. filix-mas* and *Pteridium aquilinum.* A stream flowing into the sea revealed an interesting *Osmunda* variety, a mature specimen of *O. regalis* 'Crispa'. Further searching upstream revealed more large plants exhibiting the same characteristics. The group spent some time photographing the plants and collecting spores.
After returning to the cars, the group dispersed to return home.

ESKDALE, CUMBRIA – 8-10 September

Robert Sykes

A meet leader writing his own report cannot say what a success it all was, but a very congenial group of people saw an excellent range of ferns in some of the most dramatic scenery in England. We were afraid that the lengthy drought would have affected the ferns. The filmy ferns on exposed sites were certainly suffering, but that apart everything including the ferns was agreeably fresh and green. The party visited six principal sites. The first two were visited recently by the North-West Group (see the report in the *Bulletin* **4**(5): 226). I know the last (Wet Ghyll) has been visited in the past by members. I have no record of visits to the others.

1. Stanley Ghyll (34/174997). A cleft in the southern flank of Eskdale. The narrow gorge is made accessible to the general public by a footpath and a series of bridges. It narrows at the top with a dramatic waterfall, very diminished when we visited. There are fine swathes of ferns, with many examples of all the species recorded. Its glory is the *Hymenophyllum wilsonii* but for me the great excitement was *Dryopteris oreades* which I had not previously identified.

2. Milkingsteads Wood SSSI (34/153996). Open, mainly oak woodland on the south flank of Eskdale, with many rock outcrops and exposures. There is extensive *Hymenophyllum tunbrigense.* In addition we found a small patch of *H. wilsonii* which I had not seen there before and Anthony Pigott encouraged me in my belief that a crop of *Dryopteris* is indeed *D. expansa* – another first for me. He also found *D. carthusiana* which the NW Group missed on its visit last year.

3. Black Beck (35/177103). Black Beck is an open gully on the southern flank of Mosedale north-west of Wasdale Head. For much of its length it is quite open and contains little of interest, but for a short length it closes in to give enjoyable scrambling and some interesting ferns. Most of the party turned back at that point, but a few climbed on up to the ridge at 1,800 feet. Astonishingly, Robert Crawford's sharp eyes were spotting *Hymenophyllum wilsonii* on the rocks on the flanks of the open fellside right up to the col. For the most part growth was sparse with only isolated examples of the various species, but *Cryptogramma crispa* was abundant. The hill party dropped to

photo: A.C. Wardlaw

Robert Crawford, Howard Matthews, Emma Watson, Robert Sykes, Kate Pryor, Alison Paul and Rob Huxley at Black Beck, Cumbria.

Nether beck. This would be worth a further visit, but it is in a deep gorge and not readily accessible and time did not allow any alpinism. The valley party explored Mosedale beck, visited Wasdale church and retrieved the hill party.

4. Porterthwaite Woods, Miterdale (35/142012). Open deciduous woodland with marshy flushes in the bottom. A friend of Shirley Hyde had said there were lots of ferns at this site; and so there were. There are some fine stands of *Osmunda regalis*, which I had not previously seen in this area, and a short gully with some exceptionally well grown *Blechnum spicant*. This was the only site which we visited as a group during the weekend where we did not find *Hymenophyllum wilsonii!*

5. Hard Knott gully (35/234016). This is the gully to the north of the road as it drops on the eastern side of the pass. On each side is open fellside bare of ferns except for bracken and parsley fern, yet a cleft perhaps 20 feet deep yielded a list of 13 ferns and clubmosses.

6. Wet Ghyll (34/229978). In the one brief shower which we encountered, we crossed the Duddon river (now made easy by substantial stepping stones) and walked to the point where the stream falls over an outcrop, just before joining the river. We stood and admired the rare sight of royal fern seen from underneath beside the waterfall, before hastening away to lunch, Anthony pausing only to harvest a frond of an interesting candidate for the cross between *Dryopteris affinis* and *D. oreades*, both of which grew in abundance beside the path.

Twenty-two members and guests attended the meet for all or some of the time. Many of us had dinner together on Saturday night (a revival of the Jimmy Dyce Dining Club?.. *Bulletin* Vol. 3 page 20). We were very grateful to Anthony Pigott for sharing his interest in *Dryopteris*. The meeting was enriched by the attendance of Alison Paul and three of her colleagues from The Natural History Museum who were working on a project nearby.

List of ferns and fern allies recorded during the Eskdale meeting

Note: Numbers refer to the sites given above.

Asplenium ruta-muraria	In mortar of bridge by Milkingsteads					
A. trichomanes subsp. quadrivalens	In mortar of bridge by Milkingsteads					
Athyrium filix-femina	1	2	3	4	5	6
Blechnum spicant	1	2	3	4	5	6
Cryptogramma crispa			3		5	
Dryopteris affinis agg.	1	2	3	4	5	6
- affinis	1				5	6
- paleaceolobata	1					
- borreri	1					6
- cambrensis	1					
- 'insolens'		2				
D. carthusiana		2				6
D. dilatata	1	2	3	4	5	6
D. expansa		2				
D. filix-mas	1		3			
D. oreades	1					6
Gymnocarpium dryopteris	1		3			
Hymenophyllum tunbrigense		2				
H. wilsonii	1	2	3		5	6
Oreopteris limbosperma	1	2	3	4	5	6
Osmunda regalis				4		6
Phegopteris connectilis	1	2	3	4	5	6
Polypodium interjectum	1	2	3	4	5	
Pteridium aquilinum	1	2	3	4	5	6
Huperzia selago			3		5	6
Selaginella selaginoides			3		5	
Equisetum arvense	In ballast of the Ratty railway					

AXMINSTER, DEVON – 22-24 September

Margaret Nimmo-Smith

The weekend started in the traditional manner with a briefing in the bar of the George Hotel, Axminster on the Friday evening for the nine of us who had arrived. Matt Busby, our leader for the weekend, had produced souvenir programmes with maps for all the sites, which also reminded us that the Axminster area was a popular hunting ground for Victorian fern enthusiasts and many finds had been recorded by Lowe and Druery.

The first site on Saturday was at Widworthy, parking outside the church at (30/215995), which had *A. trichomanes* growing on the wall. We walked down the lane which was rich in *A. scolopendrium*. Large plants of *Polystichum setiferum, Polypodium vulgare* and *Asplenium adiantum-nigrum* were soon found growing in the hedgerow. We walked about a mile along the lane, adding *Dryopteris filix-mas, Pteridium aquilinum, Polystichum aculeatum, Polypodium interjectum* and *Equisetum arvense* to the list, until we came to a wood on the right which we explored. Here we found large plants of *Dryopteris affinis, D. dilatata, D. filix-mas, Athyrium filix-femina, Polystichum setiferum,* and a few plants of both *Asplenium scolopendrium* and *Blechnum spicant*. We then returned to our cars to be joined by two other members.

Our second site was at Offwell, where we parked on the outskirts and walked into the village. *En route* we found *Pteridium aquilinum, Dryopteris filix-mas, Polypodium vulgare, Asplenium scolopendrium, A. adiantum-nigrum, Polystichum setiferum, P. aculeatum* and *Dryopteris affinis* agg. The first excitement came with the churchyard wall where we found many crested plants of *Asplenium trichomanes; A. ruta-muraria, A. scolopendrium* and *Dryopteris filix-mas* were also found. Alan Ogden was then very pleased to find an incised plant of *Asplenium ruta-muraria*. We continued along a lane leading out of the village and found *Athyrium filix-femina* and *Dryopteris dilatata* by a stream. These two species continued plentifully along the lane as did *Asplenium scolopendrium*; several bifurcating scollies were found, and also a *Polystichum setiferum* 'Grandiceps'.

After lunch in Honiton we drove to East Hill (30/127949) to explore Core Copse. Near the car park were large plants of *Dryopteris dilatata*, a few *Blechnum spicant*, and *Pteridium aquilinum* growing under pine trees. Down the track we found *Polypodium vulgare, Dryopteris filix-mas, D. dilatata, D. affinis* agg., *Athyrium filix-femina, Pteridium aquilinum, Asplenium scolopendrium, Polystichum setiferum* and towards the bottom, *Blechnum spicant*. This wood was not so ferny so we returned to our cars.

The last visit of the afternoon was to Kenneth Adlam's garden at King's Gatchell, Higher Metcombe, Ottery St Mary. Here we were given tea and a tour of his lovely garden packed with treasures. Ferns were spotted immediately around the house, especially on a sunken ditch path. Here a mixture of cultivars of British native ferns, and foreign hardy ferns such as *Dryopteris fuscipes, D. tokyoensis* and *D. stewartii* were thriving. A fine clump of *Blechnum chilense* was much admired as were the polypodies in their autumn glory. Scollies had a special bed to themselves, and the conservatory housed a small collection of cheilanthoid ferns in fine fettle. The main part of the garden also had many ferns as did the small greenhouse which housed *X Asplenosorus pinnatifidus, Onychium contiguum* and *Goniophlebium auriculatum*. We then walked through a gap in the hedge to Rosemary and Brian Norton's garden next door. We approached across the sunken path/ditch which they were planting with ferns in Kenneth's style. However, they have the advantage of a wooded wet area at the bottom of the garden which is ideal for ferns and now houses many different species and cultivars. There were large plants of *Dryopteris wallichiana*, lady ferns, buckler ferns, *Woodwardia radicans* and of special interest, *Blechnum nudum,* which seems to be hardy in that area. Our thanks go to Kenneth, Rosemary and Brian for such a marvellous end to the day.

Our first site on Sunday was Morganhayes Covert (30/217924) just beyond Colyton. In the car park area we found *Pteridium aquilinum, Dryopteris affinis, D. filix-mas, Polystichum setiferum* and *Polypodium vulgare*. As we ventured into this Forestry Commission wood we found good plants of *Dryopteris affinis* agg., as well as *Pteridium aquilinum, Athyrium filix-femina, Polystichum setiferum, Dryopteris dilatata, D. filix-mas, Asplenium scolopendrium* and *Blechnum spicant*. The track turned into a sunken lane, whose banks had magnificent plants of *Asplenium scolopendrium* and *Polystichum setiferum*. We explored the bank above and then continued on another path downhill. Linda Craddock cleverly spotted a plant of *Dryopteris aemula*. A few more isolated plants were found before it was time to return to the car park.

Our next expedition was a circular walk starting at Seaton Downs Hill, (30/233915). We crossed the A3052 and walked towards Seaton Down into Holyford wood. We found *Asplenium scolopendrium, Polystichum setiferum, Pteridium aquilinum, Dryopteris affinis, D. dilatata, D. filix-mas* and *Athyrium filix-femina*. We found a large stand of *Equisetum telmateia* near running water. *Polypodium vulgare* and *Blechnum spicant* were also found. On the return journey we found *Equisetum arvense* as we crossed the stream and *Asplenium adiantum-nigrum* in the hedge banks.

After lunch at the White Hart pub at Colyford we made our way to Monkton Wyld, parking at 30/343966, and walked down the lane some distance finding *Asplenium scolopendrium*, *Pteridium aquilinum* sporing, *Polypodium vulgare*, *Asplenium adiantum-nigrum*, *Dryopteris filix-mas* and *Equisetum arvense*. We then crossed a stile and a meadow to reach the mixed wood. Unfortunately the wood was rather dark so only a few ferns were found: *Blechnum spicant*, *Polypodium vulgare*, *Dryopteris affinis*, *D. filix-mas*, *D. dilatata*, *Asplenium scolopendrium* and *Polystichum setiferum*, but not the *Dryopteris aemula* recorded previously. After a short while we started back for the cars.

The final call for the day was Tony Marriage's garden at Rocombe, Uplyme. Here we found much of interest on Tony's 2¾ acre steep wooded site created over the last twenty years. We first examined his frame of young sporelings, many grown from the BPS Spore Exchange. We then traversed the many paths throughout the wooded site being shown many unusual ferns such as *Culcita macrocarpa*, *Dryopteris corleyi*, *D. sublacera* and *D. guanchica*. Tony had also grown many plants of *D. aemula* from spores which were planted in drifts. Tea was then offered and we all chatted about ferns until it was time for the party to break up and wend our ways home. Many thanks to Tony and his wife for their hospitality and to Matt Busby for organising such a well run and interesting meeting.

MADEIRA – 21-28 October

Introduction [Graham Ackers]. Madeira is a wonderful island, with a beautiful, rugged and variable topography – most notably the levadas (watercourses) built in the last century to provide irrigation from the wet interior to the drier, cultivated southern coastal plains. The levadas meander for many kilometres around the mountains, and allow access to many otherwise inaccessible areas. They are particularly valuable where they traverse the laurel and heath forests, where many of the best ferns occur. These forests are confined to the north of the island, and so we stayed in a very comfortable hotel, Estalagem do Mar on the north coast at São Vicente.

The ferns on Madeira are rather special, and consist of species with varying regional affinities – endemics to Madeira, endemics to the Macaronesian islands in general, near Macaronesian endemics (ferns with odd outposts, mainly in the Iberian peninsula), European, and tropical. These are described in a recent, and most valuable flora (Gibby & Paul, 1994). The accounts below mention many of the ferns seen at each site, but a complete fern list is given in the table at the end of this article.

Saturday 21 October [Andrew Leonard]. On a fine mild day in England, 16 people assembled at Gatwick airport to catch the 9.00 a.m. 'plane to Funchal. After a pleasant flight we collected four hire cars and set out for the first site (Site 1). We investigated a long wall on the north-west side of the main road at Santa Cruz. Here were many plants of *Cosentinia vellea* but in a rather dry state. We then drove towards our hotel at São Vicente via the north coast. On our way, we stopped by the road between São Roque do Faial and Achada do Cedro Gordo (Site 2). The highlight of this site was many plants of *Pityrogramma chrysophylla* and a few plants of *Adiantum hispidulum*.

The next stop was between Cruzinhas and Lombo de Cima (Site 3). The aim was to find some good examples of *Asplenium aethiopicum*, which we did, but to our surprise and delight we also found several *Deparia petersenii*. We then made quick stops between

Faial and Santana to see *Asplenium obovatum* subsp. *lanceolatum* and *Notholaena marantae*. Near the turn off for Queimadas we stopped to examine a shade-house full of *Rumohra adiantiformis*. At Boaventura we stopped at a local hotel and in the gardens found fine examples of *Dicksonia antarctica, Cyathea cooperi, Phlebodium aureum* and *Tectaria bolbitis*. We had a quick beer and then made our way to the hotel to relax in the jacuzzi before having a very pleasant dinner.

Sunday 22 October [Mary Gibby]. We assembled in the car park at 1,060m at the top of the pass at Encumeada, a party of 16 together with Francisco Manuel Fernandes of the Botanic Garden in Funchal and a forestry ranger (with gun!). This was to prove to be the pattern during the week, our 'minders' having been assigned to ensure that officially permitted collecting (by MG) was done 'properly'!

We followed the Levada do Norte for about 15 minutes as it winds along the south-facing slope, overlooking magnificent views of the valley of Ribeira de Serra de Agua (Site 4). Sadly the vegetation here was burnt in the early 1990s and is now somewhat sparse, though regenerating. We turned off into our first tunnel, ducking at first, but then able to progress fairly rapidly, if a little gnome-like for ten minutes to emerge into a different world of laurel forest and ferns. My first impression of this place eight years ago was of lush, dripping vegetation, but recent drought and heat in Madeira had taken their toll and the *Selaginella denticulata* was dried and reddened. But the larger ferns were still in good condition – *Diplazium caudatum*, *Woodwardia radicans* and *Pteris incompleta* – and the *Stegnogramma pozoi* lurked in the dampest places above the levada with *Cystopteris diaphana*. *Blechnum spicant* must be the commonest species in this habitat, but we encountered other local specialities, *Asplenium monanthes* and *A. anceps*, and were delighted to find our first 'carpet' of *Trichomanes speciosum*.

photo: M. Gibby

Jess Barrett and *Woodwardia radicans* beside levada at Encumeada, Madeira.

Lunch was taken by the top of the pass, and this gave us the opportunity to study *Polypodium* in the roadside cutting, *P. macaronesicum* on the east side, *P. vulgare* on the west.

After lunch we headed east up the ridge towards Pico Ferreiro (Site 5). A new road was being bulldozed near the television mast, decimating one of only two known populations of *Diphasiastrum madeirense*. And the hot dry weather had desiccated the *Hymenophyllum* – some *H. tunbrigense* could be identified but *H. wilsonii* that grows in more exposed places was completely shrivelled. Our climb was rewarded with the discovery of a clump of *Elaphoglossum semicylindricum* and later the endemic *Polystichum falcinellum* by shaded cliffs on the south-facing slopes.

Monday 23 October [Graham Ackers]. Our main route of the day took us from the road EN204 northwards along the Levadas do Mouro and da Serra (Site 6). The terrain was variable, involving rugged climbs (sometimes with the aid of vintage stone steps), level stone tracks with water dripping down the cliffs, and lovely level grassy paths. Cloud was low and mists swirling, but with sufficient breaks to reveal the wonderful panoramic views down the valley to São Vicente. Twice we passed over exposed ridges where the wind strengthened and the mist rushed. For the most part however we were in sheltered tree heath *(Erica arborea)* forest, with the laurel forest below. At one point, an enormous *Sonchus fruticosus,* an endemic 'dandelion', but in the form of a tree, caught our attention – in flower it must be an amazing sight!

As usual, varied and excellent ferns were seen. A good stand of large *Dryopteris affinis* subsp. *affinis* greeted us near the start of the walk, many smaller ones being seen subsequently. As we ascended, *D. aemula* became more and more frequent, and in places formed an almost total ground cover beneath the *Erica arborea*. It shared this habitat with *Blechnum spicant* in a characteristic association. Both ferns were also seen frequently along the levada itself. The most notable fern along the whole route was *Polystichum falcinellum,* an infrequent endemic, but certainly prevalent here. In several instances, the fronds had been grazed. The 'find' of the day was two specimens of another endemic, this one rare, the hybrid between *P. falcinellum* and *P. setiferum* = *P.* x *maderense*. Its hybrid nature is readily seen, the pinnae being morphologically just halfway between its two parents. There were two other highlights of the site, both ferns new to me in Madeira. *Asplenium anceps* is a Macaronesian endemic, not very common, but very much in evidence here. It occurred on grassy banks and in the levada wall, at one point together with *Phyllitis scolopendrium*. The latter evokes little excitement in Britain, but is a very rare fern indeed in Madeira.

In the afternoon, we looked at wall and cliff ferns around the Pousada dos Vinhaticos (Site 7). Immediately above the Pousada a crumbling steep slope had specimens of *Notholaena marantae* and *Davallia canariensis*. This slope, which was difficult to explore fully, was dominated by the Madeiran endemic *Aeonium glutinosum*.

The road leading down to Central Serra de Agua had a few shrivelled *Ceterach lolegnamense* (another endemic), *Davallia, Asplenium obovatum* subsp. *lanceolatum* and some *A. trichomanes* subsp. *quadrivalens*. All the ferns in this area were dry, but those in this wall particularly so. Faring slightly better were the *Ceterach lolegnamense* around the viewpoint in front of the Pousada, a couple of specimens looking quite handsome. With the 'official' ferning of the day ended, our party went off in various directions, some heading straight back to the hotel to dodge the showers.

Tuesday 24 October [David Jacobs]. With the day dawning warm and moist, there having been heavy rain overnight, the prospects for observing ferns were very good. Having had a good breakfast and collected our packed lunches from the hotel, the fern group set off in our hired cars along the road to Seixal, a little village on the north coast not far away from where we were based. Travelling roughly north-west we passed along the coast road cut into the side of a precipitous cliff covered with endemic plants such as *Aeonium glandulosum* and *Tolpis succulenta*. The road passed through a tunnel cut through a cliff where on the walls at the entrance was a huge colony of *Adiantum capillus-veneris*, also *Woodwardia radicans* growing on the bank.

Turning inland, we proceeded up the hill into a valley to arrive at the starting point of the day's exploration at Chão da Ribeira. We set out up a rough track across a dry river bed to the forest (Site 8). Ferns seen on a levada which flowed down alongside the ribeira were *Diplazium caudatum, Woodwardia radicans, Dryopteris aitoniana* (large plants), *Arachniodes webbianum* and *Asplenium monanthes*. High overhead on the cliff wall were *Adiantum reniforme*, lower down colonies of *A. raddianum* and some small *A. reniforme*. Entering deeper into the forest, long stands of *Diplazium* grew on overhanging banks. One large plant of *Polystichum setiferum* stood out among the rocks that littered the floor. *Blechum spicant* was also present. Passing a large pool in the river's bed containing a shoal of trout, we climbed up some concrete steps to pass a dam – ahead a deep wooded gorge beckoned us. More large *Diplazium* were found and on a small tree to one side grew a species of brown 'stag's horn' fungus. Ascending through the forest we saw plants of *Trichomanes speciosum* growing on rocks, ten to twenty fronds apiece, some with sori. *Hymenophyllum tunbrigense* covered the rotten stumps of fallen trees.

The time now being midday, we paused for lunch and a chance to disperse into the surrounding area for a personal look at a beautiful unspoilt area. *Dryopteris maderensis* and *Polystichum setiferum* were in evidence on the forest floor, as was A*splenium monanthes* and *Adiantum raddianum*, the last two preferring sloping ground. About the area were some old and venerable laurel trees covered with moss.

After lunch, having climbed up to a steep ridge (Site 9), we found common bracken *(Pteridium aquilinum)*. At the base of a tree grew a specimen of *Elaphoglossum semicylindricum* and *Hymenophyllum tunbrigense* grew on fallen trees. At 800m we reached a levada flowing under a cliff where more specimens of *Elaphoglossum* grew, resembling small hairy hart's tongue fern. We explored the levada east and west, the many waterfalls making a wet and rather hazardous prospect. We returned tired and happy having enjoyed a good day's ferning.

Wednesday 25 October [Pat Acock]. The weather could not make up its mind when we set off for Ribeira Funda (Site 10). This village, hidden from the road, could only be accessed by climbing 600 steps and our 'minder' for the day, Bernardo, told us it was inhabited by only three families, though the terraces were worked by people who lived in neighbouring villages. The terraces of dry-stone wall were our principal interest as we were to find *Asplenium aethiopicum* and *A. hemionitis*. Many more common ferns were in the damper wall bottoms and in the river-banks. Andrew and Mary found *Culcita macrocarpa* plants in a village garden and the lady of the house said she had found them further up the mountains.

Before moving to the next site at Levada da Central da Ribeira da Janela (Site 11), an enormous wave drowned the Ripley's car which unfortunately had the boot and windows open, and a rock smashed the Craddock's sun-roof. The weather had made up its mind, and in a steady downpour a smaller party made its way along the levada. Here the ferns included the four adiantums and *Doodia caudata* along with many splendid Madeiran ferns growing in ideal conditions. Lesley had decided to walk home from the first site during the afternoon and discovered *Pteris vittata* at the foot of the coastal cliff.

Thursday 26 October [Jennifer Ide]. Today was 'recap' or 'how many ferns have you learnt to recognise' day for we were not to see anything new but were to see a wide selection of the 55 ferns and allies seen so far of the 77 listed in the Flora of Madeira (Gibby & Paul, 1994).

The morning started wet, but a rainbow in the sky soon after we drove away from the hotel augured well for better weather than yesterday; the promise was fulfilled and a mild, though occasionally overcast day ensued.

At Ribeira da Janela, close to the north-west corner of the island, we parked the cars at the end of the made-up road (approx. 400m) and started the one and a half hours gentle climb along an unsealed road (Site 12), first through a short stretch of derelict scrubland, then a plantation of eucalypts, and finally through a conifer plantation before entering open heathland dominated by *Erica arborea,* typical of so much of the island. We saw fourteen species of ferns on the banks either side of the road, mainly in the areas of the plantations. Of particular note were *Doodia caudata* and *Asplenium onopteris,* not seen since the beginning of the week, and *Dryopteris aitoniana,* one of the ten pteridophyte species and hybrids endemic to the island, and a small cyathean tree-fern. A note of concern is that many of these ferns may be lost when the promised upgrading of this road occurs to make it part of a chain of highways across the island from west to east.

At 810m the road crosses the Levada do Cedros and we followed this southward for about two hours (Site 13). It was a pleasant leisurely walk, initially through transitional vegetation between the heath and laurisilva (laurel forest), but this soon gave way to pure laurisilva, providing welcome shade and a cooler temperature compared to the road. On one side of the levada the mountain-side rises almost vertically, and for a metre or so the almost continuously moistened rock surface provides a suitable environment for bryophytes, which themselves provide the initial foothold for the ferns and other higher plants; whilst on the other side of the path the woodland floor falls steeply away into the ravine.

The trees of the laurisilva form a dense cover and very little light reaches the forest floor. Consequently, except for occasional openings in the canopy, which when they occur at the level of the path can provide spectacular views across the ravine, there is very little vegetation beneath the trees. The levada cutting through the forest allows some light to penetrate to the forest floor and on the forest side of the path, a little way into the forest, typical woodland ferns such as *Pteris incompleta,* of which there were some magnificent specimens 2-3 feet tall, *Diplazium caudatum, Dryopteris affinis* subsp. *affinis* and *D. aemula* were seen. A well grown *Cyathea* sp. was seen in the forest about 30m from the path. Other highlights seen along the levada path were young sporelings of *Cyathea* sp., and *Polypodium macaronesicum* and *Davallia canariensis* growing epiphytically on a very large, old and rather handsome tree, some rare plants of *Dryopteris maderensis* and a single plant of *Asplenium monanthes.*

The moist banks of the levada provided an ideal habitat for large numbers of *Blechnum spicant,* but it was rare to see them as large as can be seen in Britain, the small, attractive fern *Cystopteris diaphana,* looking very much like our own C. *fragilis,* and *Stegnogramma pozoi,* revelling in the humidity it requires. A number of folk were consistently confusing the latter with *Christella dentata,* found in drier habitats, and its presence provided an opportunity for a revision of its distinguishing characters. By now we were becoming complacent about the presence of *Selaginella denticulata* in the habitats we were visiting, but never failing to raise cries of delight were the rare patches of *Trichomanes speciosum* and *Hymenophyllum tunbrigense.*

At an altitude of approximately 1,025m members of the group decided at various intervals that they should begin the return if they were to arrive back at the cars with feet and legs in non-complaining mode! At least it would be downhill all the way! Two and a half hours later, six hours after we had first left the cars, all the party were enjoying refreshments at the ubiquitous Madeiran bar near to where the cars were parked!

Friday 27 October [Paul Ripley]. We set out, annoyingly a few minutes late, to the east of São Vicente for a change, where we stopped at a nursery (Nortiflor) where splendid specimens of *Diplazium esculentum* were in cultivation. This fern had been found by the owners growing in a gully above the nursery. Several of us left with kindly donated specimens of 'Feto Metro' *(Goniophlebium subauriculatum)* which we had admired in many hotels and restaurants during the week.

We made a brief stop at Ponta Delgada, where *Asplenium marinum* was growing in profusion on a church wall facing the sea. We also saw this plant, with *Adiantum capillus-veneris* and *Polypodium macaronesicum,* growing in a well in the churchyard.

The main site for the day was along the levadas below Rabaçal (Site 14). The western highlands of Madeira are dominated by the Paúl da Serra ('marsh of the mountain range') which resembles a Scottish moor rather than a subtropical landscape. On the steep north-facing slopes run three contour-hugging levadas, at a vertical distance of about 100m apart. The upper draws water from a tall waterfall (Risco), while the lower passes the '25 fountains'. Both these places (former volcanic vents?) offer water-soaked vertical cliffs which were the only places where *Asplenium anceps* and *A. monanthes* were found on that day. *Stegnogramma pozoi* and *Cystopteris diaphana* were abundant in these wet places, and at Risco *Phyllitis scolopendrium* was found again.

Some species had marked height distribution: *Polystichum falcinellum* was only found at about 850m and above (the hybrid *P.* x *maderense* was also found), while *Adiantum reniforme* and *Asplenium trichomanes* subsp. *quadrivalens* were only found below the lowest levada. *Dryopteris aemula* was commoner at the higher levels, and *Trichomanes speciosum* was seen at only one location. Other ferns were found at all levels, though not necessarily in abundance. *Pteridium aquilinum* was common, and *Polystichum setiferum* widespread. The Madeiran plants of the latter species are notably uniform, with neater, smaller pinnules (the lowest pair of pinnae markedly reflexed) than those we are used to seeing in Britain. *Blechnum spicant* and *Selaginella denticulata* (but surprisingly not *S. kraussiana* at this site) were common. *Dryopteris aitoniana, Woodwardia radicans, Pteris incompleta, Diplazium caudatum* and *Athyrium filix-femina* were features of the wetter slopes. *Asplenium onopteris,* *Davallia canariensis* and *Dryopteris affinis* subsp. *affinis* completed the record, but *D. maderensis* was seen on the road from the plateau down to Santa.

I would like to end this day's report by congratulating the leaders on a richly enjoyable week. Graham's organisation was superb, and Andrew's research and remarkable knowledge of the island and its flora were, in spite of some wayward timekeeping, extremely impressive.

Reference: M. Gibby & A.M. Paul. 1994. Pteridophyta, pp. 25-53, plates 1-4. In: J.R. Press & M.J. Short (eds.), *Flora of Madeira*. Published by HMSO/The Natural History Museum. ISBN 0-11-310017-5.

List of Sites in the Table

Site 1.	21 Oct.	South-East Madeira. A lane wall in Santa Cruz.
Site 2.	21 Oct.	North-East Madeira. Roadside walls and banks between São Roque do Faial and Achada do Cedro Gordo.
Site 3.	21 Oct.	North-East Madeira. Roadside verges and banks between Cruzinhas and Lombo de Cima.
Site 4.	22 Oct.	West-Central Madeira. West from Encumeada along the Levada do Norte as far as the entrance to the second tunnel.
Site 5.	22 Oct.	Central Madeira. East from Encumeada along the old road to Pico Ruivo for 2 km.
Site 6.	23 Oct.	West-Central Madeira. North from road EN204 along Levadas do Lombo do Mouro and da Serra for 3 km.
Site 7.	23 Oct.	Central Madeira. Walls and cliffs in the immediate vicinity of Pousada dos Vinhaticos.
Site 8.	24 Oct.	North-West Madeira. Woodland on the west bank of Chão da Ribeira.
Site 9.	24 Oct.	North-West Madeira. Eastern woodland slopes of Chão da Ribeira.
Site 10.	25 Oct.	North-West Madeira. Ribeira Funda.
Site 11.	25 Oct.	North-West Madeira. Levada da Central da Ribeira da Janela.
Site 12.	26 Oct.	North-West Madeira. South from Ribeira da Janela along the dirt road EN209 to the Levada dos Cedros crossing.
Site 13.	26 Oct.	North-West Madeira. West from EN209 along Levada dos Cedros for 4 km.
Site 14.	27 Oct.	West-Central Madeira. Levadas around Rabaçal.

photo: L. Williams

São Vicente, Madeira
Back: Mary Gibby, David Jacobs, Pat Acock, Lesley Williams, Graham Ackers, Paul Ripley, Kate Ripley, Andrew Leonard, Jacques Homes, Mark Kitchen, Trisha, Linda & Mick Craddock.
Front: Grace Acock, Jess Barrett, Linda Ripley, Esther Balasse, Jennifer Ide, Gillian Ripley, Clare Kitchen.

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December 1995

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Site	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Huperzia suberecta				R	O									
Selaginella denticulata		O	C	C		A	O	A	F	C	C	C	A	A
S. kraussiana								A		C	C			
Equisetum telmateia			O	R						O				
Notholaena marantae							O							
Cosentinia vellea	C													
Pityrogramma chrysophylla		O												
Adiantum reniforme			O					R	R	O	O			O
A. capillus-veneris						R			O	O	O			
A. raddianum		O						O	O	O	C		O	
A. hispidulum		R									R			
Pteris incompleta				F		F		C	F	O	O		A	O
Hymenophyllum tunbrigense				O	F			A	A	R			O	
H. wilsonii				O	O				R					
Trichomanes speciosum				O	O			A		A	R		F	R
Polypodium macaronesicum	O	O	C	F	O	O	O	R	R	C	O	O	R	O
P. vulgare				R	R	R	R							
Cyathea sp.												R	R	
Pteridium aquilinum			C	O	F	F	F		O	C	F	A	F	C
Oreopteris limbosperma					F								O	
Stegnogramma pozoi			O	A	F	F		C	C	F		O	C	C
Christella dentata		O	F							F	C	O		
Asplenium onopteris		O	O	O	O	O		O	O	O	O	O	O	O
A. obovatum subsp. lanceolatum							R							
A. aethiopicum			O							O				
A. anceps				R	R	O								R
A. trichomanes subsp. quadrivalens						R	O							O
A. monanthes				F		O		O	O	R	R		O	R
A. hemionitis										F				
Ceterach lolegnamense							F							
Phyllitis scolopendrium						R								R
Athyrium filix-femina			C	F	F	F		O	F	F	F	O	F	F
Diplazium caudatum				F				A	O	C	C	O	F	O
Deparia petersenii			O											
Cystopteris diaphana			C	F	O	C		F	F	O	F	O	O	C
Polystichum setiferum				C	O	F		F	F	F	F	O	C	C
P. falcinellum				R	R	C								F
P. x maderense						R								R
Arachniodes webbianum								C		F	F			
Dryopteris affinis subsp. affinis				O	F	F		O	O		O	O	F	O
D. aitoniana	R			R				F	F	F	O	O	F	C
D. aemula				F	C	A			F			O	F	C
D. maderensis					O			F	O	O			R	
Elaphoglossum semicylindricum					R				O					
Davallia canariensis		C	C	O	F	O	F	O	O	C	F	O	F	F
Nephrolepis cordifolia												O		
Blechnum spicant			C	F	A	C		O	C			O	A	C
Doodia caudata		O	O							R	O	O		
Woodwardia radicans		O		A		O		F	O	O	C	F	F	F

Notes: The nomenclature and sequence follow Gibby & Paul, 1994.
The abundancy notation used is – Rare, Occasional, Frequent, Common, Abundant.

REGIONAL MEETINGS 1995

MIDLANDS

A.R. Busby

Due to personal circumstances no Midlands region meetings were held this year. However, my inertia did not prevent other members rallying to the cause and ensuring that the Society was once again in evidence at the Malvern Spring Show which is reported elsewhere in this journal. I shall do my best to provide a full programme in 1996. Members wishing to receive details of next year's programme should send a stamped addressed envelope to me.
My thanks to all Midlands members for their support and encouragement during this difficult year.

LEEDS & DISTRICT

AGM, Harlow Carr, Harrogate – 18 March. Twenty-eight members from as far afield as Cleveland, Cumbria and Bedfordshire attended our AGM at the Study Centre at Harlow Carr Gardens. After the business section of the day we adjourned to the nearby Harrogate Arms for lunch and a chance to chat with friends old and new.

In the afternoon Matt Busby gave us an excellent illustrated talk on propagating and growing ferns – mainly the alpine and mountain type, with lots of hints relating to his personal experiences. It certainly was a very worthwhile day. The afternoon finished with a further chance to get up-to-date on ferny news over a cup of tea and biscuits.

Anne Stark

Bilton Gala, Harrogate – 8 May. Our stand at Bilton Gala once again attracted a lot of attention and many queries were answered about ferns in general. Lots of plants were sold for group funds many of which were supplied by Mrs Ivana Urdal, and we do thank her, especially as she is not yet a member of the BPS. Mrs Urdal also helped on the stand with her daughter. Thirty-nine attended the lecture.

Jack Bouckley

Teesdale – 10 June. It will come as no surprise that this report begins with the revelation that the visit to Teesdale was blessed with good weather (for a *Cheilanthes*), but was absolutely diabolical for both man/woman and ferns alike. From a convenient meeting point at the car park at 35/867298 a select band of enthusiasts set off for Langdon Beck (35/850399). Crossing Langdon Beck itself (onto the south side) and walking SE towards the confluence with the Tees we encountered some large clumps of *Dryopteris filix-mas* and a few stems of *Equisetum arvense* in two forms. This gave a good opportunity to study the branched 'shade' form (which may be confused with *E. sylvaticum*) and the unbranched 'unshaded' form. Within a few paces the path ran closer to the beck where our first stand of *E. pratense* was found.

At a point opposite Hunt Hall, at Close Bank (35/852303) a diligent search turned up one small strand of E. *variegatum* on the base-rich, flushed bank. Further down the path towards Saur Hill Bridge (35/854302) we passed a few stems of *E. palustre,* some *Athyrium filix-femina* and, with some difficulty, a few scattered plants of *Botrychium lunaria.* We refound the *Selaginella selaginoides* seen on the pre-meeting visit in May, some small specimens of *Dryopteris affinis* and *Athyrium filix-femina.*

After crossing Saur Hill Bridge back onto the northern side of the beck we joined the Pennine Way. The search of what would have been an island in a normal summer, at 35/855300, failed to rediscover the *Equisetum variegatum* that had been recorded previously.

Back to the car park for lunch and then on to site 2. Parking just off the B6277 at the Ettersgill road (35/893284) in a less than salubrious lay-by we walked back up the road, passed the obligatory *Pteridium aquilinum,* and turned left down the track to cross the bridge that lead back onto the Pennine Way. The bridge itself was bursting with ferns, well almost. We clocked up *Cystopteris fragilis, Polypodium vulgare, Asplenium scolopendrium, A. adiantum-nigrum, A. ruta-muraria* and *A. trichomanes* – presumed to be subsp. *quadrivalens,* but no-one offered to be dangled by their ankles over the raging torrent of the Tees to find out!

After crossing the bridge we found some 'real' *Equisetum sylvaticum* in a marshy area around 35/889283. Despite being wet we could not find any *E. palustre* or *E. fluviatile.* At this point we left the Pennine Way for private land within the National Nature Reserve, with permission of the English Nature warden. This 'non-path' scrambled along the western bank of the Tees through the deep valley cut by the retreating High Force waterfall. This valley was densely clothed mainly in Birch *(Betula pendula)* woodland.

The first treat was a magnificent stand, well more of a forest in miniature, of *Selaginella selaginoides,* some unfurling *Oreopteris limbosperma* and both dark and pale rachis forms of *Athyrium filix-femina.* The acidic nature of the woodland was demonstrated by the presence of *O. limbosperma, Gymnocarpium dryopteris, Blechnum spicant,* and *Phegopteris connectilis.* The ubiquitous *Dryopteris dilatata* and *D. filix-mas* were found in several places. The *D. dilatata* surrounded a sizeable colony of *D. carthusiana* but there was no evidence of any hybridisation between the two. *Polypodium vulgare* was seen growing both epiphytically and on rock outcrops. Further colonies of *Pteridium aquilinum* and *Equisetum sylvaticum* were also seen. As the woodland opened out approaching High Force there were a number of rocky screes covered in large clumps of *Dryopteris affinis.* Unfortunately these were not unfurled enough to make a determination as to their morphotype(s). There were also some smaller ferns that could possibly have been *D. oreades.* Both of these needed further checking, so a second visit was proposed for a later date.

Soon after this scree area the 'path' passed a vertical cliff that, even in 1995, was dripping with water. There was strong evidence that this was base-rich and influencing the fern flora resulting in a strange mixture of calcicolous and calcifugous species. On the acid side was *Blechnum spicant* and, interestingly, *Huperzia selago.* Some *Asplenium trichomanes* were found, but they were small and few in number, so no attempt was made to determine their subspecies. On the basic side were *Cystopteris fragilis, Asplenium trichomanes-ramosum* and *Polystichum aculeatum.* After a steep climb we saw the spectacular view of the 'Force' itself.

After a short rest it was on to site 3 at Stotley Grange, east of Middleton-in-Teesdale at 35/968263. Here, by kind permission of the owner, Mr Nigel Mitchell, we searched for signs of what had been recorded as a large colony of *Botrychium lunaria* back in May 1992. Not so large in 1995. After much searching, crawling and desperate wishful thinking one small plant was found, all 2cm of it. It may not have been spectacular, but it confirmed the earlier record. On the brighter side, there was a bonus. Tucked away at the bottom of a slight slope was an equally spectacular *Ophioglossum vulgatum*, measuring up to a full 2.5cm.

Epilogue

As the majority of ferns were not fully expanded, a second party of members assembled on the 29th July, mainly to collect *Dryopteris affinis* fronds for 'Affinis Watch', but also the probable *D. oreades*. The latter turned out to be a starved specimen of *D. affinis*. Other changes included a total absence of *Botrychium lunaria* and *Ophioglossum vulgatum* and a better record of *Equisetum variegatum* at site 1 in a dried-up rill running round the 'would-be' island.

All-in-all a successful couple of days. If only *Botrychium lunaria* and *Ophioglossum vulgatum* weren't so fickle!

Barry Wright

Ingleborough, North Yorkshire – 15 July. We met at Chapel le Dale (34/743777) to continue a field study started last year of the Southerscales limestone pavement which is part of the Ingleborough complex. The leader was Jack Bouckley and the visit was made by kind permission of the Yorkshire Wildlife Trust and English Nature who jointly own and maintain this area.

On the path leading up to the pavement we passed *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes* subsp. *quadrivalens, Cystopteris fragilis* and *Dryopteris filix-mas*. Once we got onto the pavement we soon found more of the ferns seen on the footpath plus *Asplenium trichomanes-ramosum (A. viride)* (rare), *Athyrium filix-femina, Dryopteris affinis, D. dilatata, D. submontana, Gymnocarpium robertianum* and *Polystichum aculeatum.*

The weather was beautiful, with sunshine and a light breeze so we decided to sit down on the very dry pavement to eat our packed lunches. As can be expected in this area the weather suddenly changed and within seconds low cloud had rolled across and the heavens opened as rain lashed down before we could get off the pavement. Owing to the treacherous conditions when limestone is wet we continued our search on the grassy ground to the east of the pavement where we found about seven small groups of *Botrychium lunaria.*

It was a very successful day and all nine members really enjoyed themselves.

Jack Bouckley

Hack Fall Woods, Grewelthorpe, Ripon, North Yorkshire – 19 August. We were all set for a field study in the Ripon area but unfortunately Bob Adams, who was to have led us, was not fit and the venue had to be changed. Jack Bouckley took the group to Hack Fall Woods (44/235775), repeating a trip we did years ago with Dr W. Sledge.

The woods are now owned by the Woodland Trust who gave us permission to search the whole area without sticking to the paths. It was like a jungle in places but at least we kept cool in spite of the blazing sunshine as we were shaded by trees. *Pteridium aquilinum* was everywhere. Large clumps of *Athyrium filix-femina* and *Dryopteris affinis* subspp. *borreri* and *affinis* were dotted about. As we got deeper into the woods *D. dilatata* and *D. filix-mas* became more plentiful and there were some very large stands of *Equisetum telmateia* and many plants of *Blechnum spicant.* We were just thinking about stopping for some lunch when Ann Robbins spotted a small plant almost hidden in the undergrowth which turned out to be *Gymnocarpium dryopteris.* What a wonderful find!

After lunch we saw what appeared to be *Polypodium interjectum* growing on a fallen tree and then, not more than a hundred yards away, were masses of *Asplenium scolopendrium.* We did not see *Polystichum aculeatum* or *Phegopteris connectilis* which we know are there, but maybe we will have better luck next time.

Jack Bouckley

Bingley, Yorkshire – 15 September. *"Felix humilis repens, fol. pellucidus et splendentibus, caule"* (Small creeping fern with splendid translucent leaves and winged stalks). So John Ray described *Trichomanes speciosum* in his *Synopsis of British Plants* (1724) when a Dr Richardson found it "...... in a little dark cavern, under a dripping rock, below the spring of Elm Crag well in Bell Bank .... In this place I saw it in plenty in the year 1758 ......" (J. Bolton in *Filices Britannicarum,* 1785). It was thought to be extinct by around 1800, but no-one then could foresee the discovery of independent hymenophyllaceous gametophytes in the U.S.A. in the 1970s, nor that the gametophytes of the almost extinct *T. speciosum* would be subsequently found in more than 70 British localities.

It was at St Ives, just outside Bingley, and close to Bell Bank, that seven of us met to hunt local ferns in general and *T. speciosum* in particular, led by Richard Unett, ably abetted by Jack Bouckley. First, in the morning, we explored along a network of extremely well sign-posted footpaths around the St Ives estate, these days a turf research station, golf-course and rather ordinary, managed woodland. Among the trees the dominant ferns were predictably bracken *(Pteridium aquilinum)* and *Dryopteris dilatata,* with scattered *D. filix-mas* and *Athyrium filix-femina.* In the mortar of a wall behind the big house were two *Asplenium scolopendrium* and a few *A. trichomanes* subsp. *quadrivalens,* so the pteridophyte flora was pretty ordinary.

However, we were soon animated by the discovery of an enormous *Dryopteris affinis* with fronds a good metre long and dead fronds packed around the bases of the numerous crowns. It had dark green fronds with long, serrated, round-tipped pinnules against the rachis, and the term *'robusta'* crept into our thoughts but, properly cautious, we decided to await confirmation from the frond Jack took to send to 'Affinis Watch'. We attempted to explore the bog at the end of a substantial anglers' lake but found not a single fern where we were able to penetrate the rhododendron forest that it has become. The long task of reclaiming the bog is currently under way, but it will take a long time to finish. We completed a circuit of the estate with no new fern finds and adjourned for lunch at the Brown Cow in Bingley. The beer, Timothy Taylor's, was excellent, and the platefuls humungous – just ask Betsy Kohler about her gammon!

Just four of us returned to scour Bell Bank for *T. speciosum.* Jack had visited the site some years before with Clive and co. but it seemed at first that his memory would not serve us well. The woods were complicated, and the previous party had approached from the opposite direction, so when we quite easily found the place using Jack's memory we happily apologised for ever doubting it. As we crashed around in the rocky undergrowth we encountered two further distinct *D. affinis* morphotypes, one specimen of *borreri* and another, in some number, which requires expert determination.

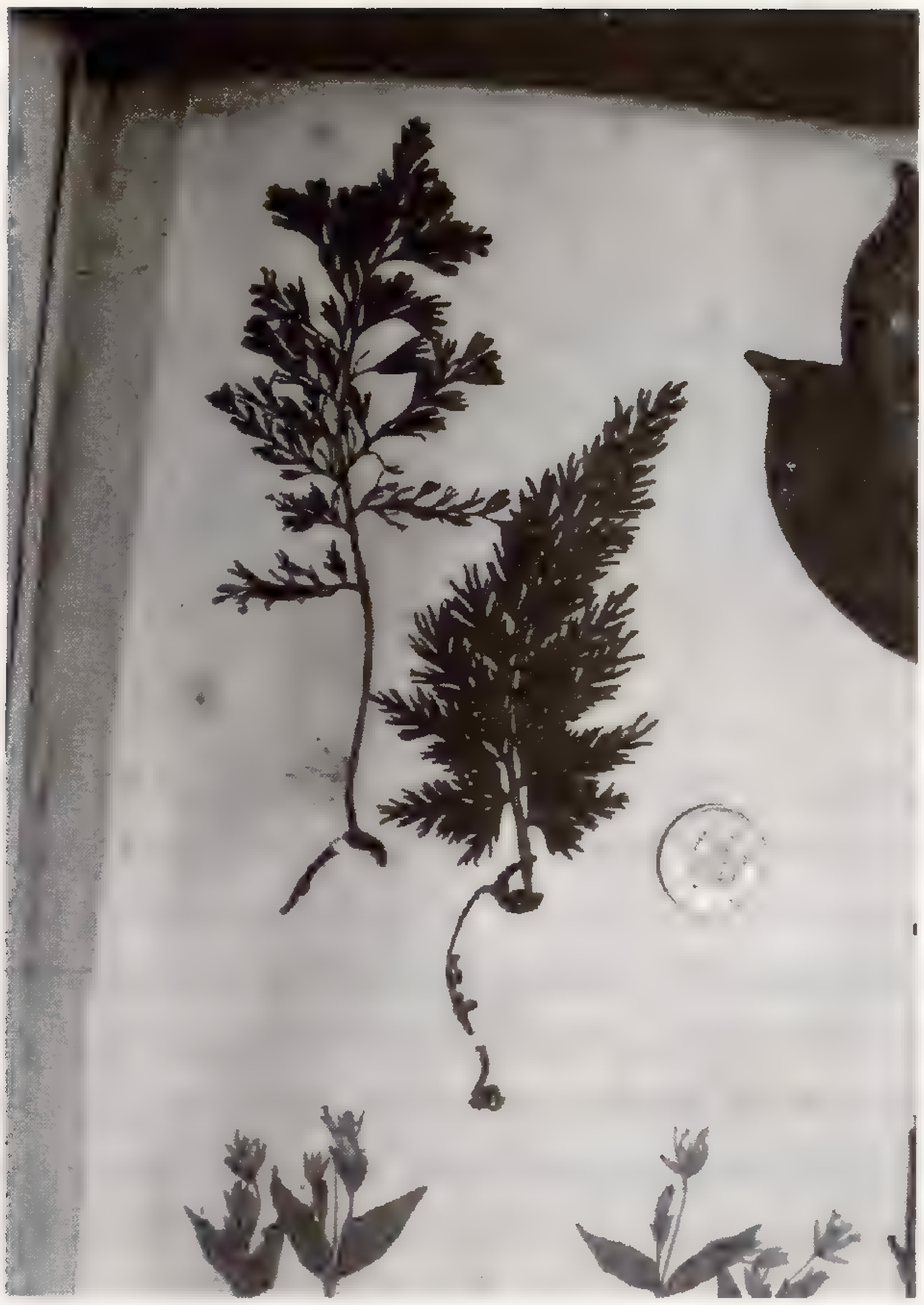

photo: F. Rumsey

Trichomanes speciosum collected by Richardson in the early 18th century. Specimen in Sloane Herbarium, Natural History Museum, London.

Though we'd found the spot where Richardson and other 18th century botanists had seen plentiful *Trichomanes,* and where others have seen gametophytes, we were unable to confirm either. The former was not to be expected, but the latter could well have been there, adhering to the roof of the little cave, right at the back, but the water was deep and none of us willing to get a soaking. If the gametophytes had been on the accessible parts of the roof, then the 1995 drought had got them. I suspect that they were right at the back in the low light levels they love so, and where only the most amphibious pteridologist would see them.

For my part, I was very happy to have visited this historical place where *T. speciosum* used to grow, described by so many early botanists and still evidenced by Richardson's herbarium specimen which I have had the privilege of seeing.

James Merryweather

WESSEX

Jim Jarvis

Wye Valley, Gloucs./Gwent – 5 August. Bigsweir Wood (32/544056), owned by the Woodland Trust, is regarded as one of the most important areas of semi-natural woodland in the Wye Valley. It was very pleasant on this hot day but ferns were few in number. We saw *Athyrium filix-femina, Blechnum spicant, Dryopteris affinis, D. filix-mas, D. dilatata* and *Pteridium aquilinum.*

We crossed the river into Wales and after lunch walked through Bargain Wood, Cleddon, Llandogo and back to the car park. Cleddon Falls is a tiny stream dropping very steeply down the side of the valley to the Wye. By the falls it was cool and damp with plenty of ferns. We found *Polypodium interjectum* and *Polystichum setiferum* at the top of the reserve and *Asplenium scolopendrium, Athyrium filix-femina, Blechnum spicant, Dryopteris affinis, D. dilatata* and the inevitable *Pteridium aquilinum* on the way down. A few of the *D. affinis* were very different from the prevailing morph. *borreri;* after much frond twisting and page turning we settled for morph. *paleaceolobata*. Away from the water the drought was beginning to take its toll, the aspleniums on the walls in Llandogo and by the roadside on the walk back up the hill were suffering badly and even the ferns in the woodland were starting to flag. I expect this year's losses will become next year's distribution puzzle.

Forest of Dean, Gloucs. – 6 August. I had intended to look at a number of disused limestone quarries in the Mitcheldean and Huntley area because they are geologically interesting, have some ferns growing in them and on the rock-faces and are home to other interesting plants. When my wife and I visited the sites earlier in the year it had been cooler and we had found greater butterfly orchid, the promise of autumn gentian and discovered that the best site is an old domestic refuse landfill. Saturday had been hot and Sunday promised to be hotter. I was joined by the Craddocks, Mr and Mrs Matthews and a Gloucester Naturalist who wished to brush up on ferns.

The prospect of all that rubbish in the heat was too much, so I changed my mind and we walked the ferny tourist trail east of Coleford: Cannop, Wimberry Slade, Bixhead and Spion Kop Quarries and back to Cannop Ponds (32/6010). The area is suffering from people pressure – the secret places now have well worn cycle tracks through them; fortunately the ferns don't seem too bothered yet. The *Gymnocarpium dryopteris* seems to be retreating, the *Equisetum sylvaticum* has expanded and the possibility of the *Asplenium trichomanes* being subsp. *trichomanes* is still contested.

I was shown marsh pennywort flowers by the Gloucester Naturalist and for some strange reason that made my day.

Frome Valley, Stroud, Gloucs. – 3 September. It was a pleasant Sunday afternoon walk from Pinbury Park (32/963054) to Sapperton, Daneway, Dorvel Wood and back to the cars. There are not many ferns but there is *Gymnocarpium robertianum* growing on the portal of the canal tunnel at Sapperton and there are some large *Polystichum aculeatum* on the banks of the Old Pack Road where it drops down to the stream at Pinbury. Altogether we saw *Asplenium ruta-muraria, A. scolopendrium, A. trichomanes, Dryopteris dilatata, D. filix-mas, Gymnocarpium robertianum, Polypodium interjectum, Polystichum aculeatum, P. setiferum* and *Pteridium aquilinum.*

The colony of *Gymnocarpium robertianum* is seriously threatened by the antics of a local 'Conservation Group' so I was very pleased when the right people turned up for the meeting because to date my protests have gone unheeded. This year the Gloucester Naturalists were ornithologists and fungus fanciers. It was too early for mushrooms but the twittering birds in the tree tops were definitely nuthatches! Next year I will take binoculars.

SOUTH-EAST

Oxshott Heath and West End Common, Esher, Surrey – 17 June. Sixteen members from the South-East group gathered at Oxshott Station for a day amongst the pteridophytes of Oxshott Heath and West End Common. It was a mild but overcast day which saw some rain during the afternoon. The meeting had been arranged by Steve

Munyard, and was led by Brian Spooner, who has a long-standing interest in the natural history of the Commons around Oxshott and Esher. Armed with a list, provided by the leader, of the 21 species of ferns and fern allies recorded from the area, the group set off for the damper areas of the Heath in search of ferns, some of which had been unrecorded for many years.

Drier parts of the Common, suffering from lack of management and invasion of pines, had seen substantial loss in diversity of flowering plants but, in the damper parts, notably along the drainage ditches, many of the ferns listed were found. These included *Oreopteris limbosperma,* first recorded in 1984, and now refound in two localities near Oxshott Bog. In addition, *Osmunda regalis,* considered to be native in this site, was confirmed, with plants of various age being noted. Other worthwhile records from here were *Dryopteris carthusiana* and *D. affinis* morphotype *borreri,* the latter species unrecorded since 1961.

After a short visit to 'The Prince of Wales' at West End for a much needed hot lunch, the party moved to West End Common for the afternoon. Here a fine stand of *Equisetum fluviatile* was recorded, resplendent with full complements of symmetrical side branches. This species was seen again in its more usual form around Chequers Pond, an old pond long known for flowering plant rarities such as *Oenanthe fistulosa* and *Hypericum elodes.* Nearby in the damp woodland close to West End Lane was noted a candidate for *Dryopteris* x *deweveri,* of particular interest as this hybrid has not previously been recorded from the Commons. Elsewhere in the damper parts many fine specimens of *D. carthusiana* were observed as well as the more usual woodland ferns. It proved an interesting meeting, with 11 species being recorded in all.

Pat Acock & Brian Spooner

Petersfield, Hampshire – 15 July. The second South-East meeting was held on this drizzly Saturday, led by the enthusiastic Andrew Leonard. The first stop was a hanger near Ashford Chace, Steep, Petersfield (41/735265), where there was a wealth of ferns for the 14 BPS members and guests to investigate. We discovered fine specimens of *Polystichum setiferum* and *P. aculeatum,* a plant of the hybrid, *P.* x *bicknellii,* and colonies of excellent undulating *Asplenium scolopendrium.* Several wild maples were home to *Polypodium interjectum* high up in between the branches and *Dryopteris dilatata* was seen growing from a tree-trunk. A *D. affinis* morphotype *affinis* plant was found sporting fronds five feet long. We enjoyed a walk down a neighbouring lane (41/748304) to a quaint old mill house where we were able to see *D. affinis, Polystichum aculeatum,* large athyriums and *Asplenium scolopendrium.*

The high point of the day was seeing a flint wall full of *A. ceterach* in the village of Upper Farringdon, south of Alton (41/708352). There were literally hundreds of plants though some had suffered from the drought. A crested specimen became the centre of attention and several people tried to obtain spores.

After a pub lunch we visited a number of wall sites and disused railway bridges near Bailey Green (41/6727 + 6728). There we saw colonies of *Asplenium trichomanes, A. adiantum-nigrum, Polypodium interjectum* and more hart's tongues. It was a very interesting day that had been well researched and planned by Andrew.

Tim Brock

Harrow, Middlesex – 14 October. On this unseasonably warm autumn morning 20 members met in Stanmore in the London Borough of Harrow. Ferns are generally scarce in Middlesex but our leader, Howard Matthews, had some interesting sites lined up for us. He first took us down a path adjacent to Lower Priory Farm (51/154923). Here, on the banks of a small stream, was a profusion of *Asplenium scolopendrium* with some *Polystichum setiferum* and *Dryopteris filix-mas.*

Bentley Priory Local Nature Reserve, an SSSI, was explored next (51/158923). After admiring the unusual long-horned cattle grazing near the Reserve's entrance, we saw *D. filix-mas,* a single plant of *D. dilatata, Polypodium interjectum, Polystichum setiferum* and *Asplenium scolopendrium* growing on the rocky slope down to Summerhouse Lake. A few intrepid members crossed on to the small island, adding *Dryopteris affinis* to the list. It was interesting to see so many hornbeams in the wood; other trees included horse chestnut, beech, hawthorn, birch and oak. The largest oak in Middlesex, said to be 400 years old with a girth of about nine metres, was magnificent.

The grassland we passed through is apparently home to *Ophioglossum vulgatum.* In early summer numerous fronds are visible, tiny in size due to the heavy grazing. Scrubby areas supported two-metre high plants of *Equisetum telmateia* as well as more *Dryopteris affinis* (? subsp. *affinis*), *D. filix-mas* and *D. dilatata.* We completed the circuit to the cars, passing a fallow deer enclosure.

After lunching at the Case Is Altered public house we moved to Harrow Weald Common and Grimsdyke Open Space (51/142927). The woods here comprised mainly oak, beech, sweet chestnut and rhododendron, with bracken the commonest fern. Some of the species seen were relicts of Victorian planting – *Osmunda regalis,* a finely divided *Polystichum setiferum* and *Onoclea sensibilis.* The latter was a new record, discovered in one of the wetter areas by Pat Acock. *Dryopteris dilatata, D. filix-mas* and *Athyrium filix-femina* were also found, and *Asplenium scolopendrium* grew on a wall. The garden of the Grimsdyke Hotel (former home of W.S. Gilbert) additionally contained *Polystichum setiferum* 'Divisilobum'; large plants of *Asplenium trichomanes* subsp. *quadrivalens* were growing in the mortar of the walls and there was *Osmunda regalis* over three metres tall in the ditch behind the garden wall.

Away from the garden, on the bank of a ditch, Howard showed us the only plant of *Blechnum spicant* known in Middlesex. This had apparently grown from spores in the soil after the original plant had 'gone missing'. The ditch banks also supported *Dryopteris dilatata, D. affinis* subsp. *borreri* and *Equisetum sylvaticum.* The horsetail was apparently declining, possibly due to ditch clearance. However, Pat found plenty more in the field over the fence ... and another plant of *B. spicant.*

Howard's garden in South Harrow contains a wealth of ferns. The lists we were given detailing the whereabouts of every variety (*c.*120) helped each of us find plants of special interest. Failing light drove us indoors where we partook of the delicious spread prepared for us by Howard's wife – thank you Tina. The four garter snakes belonging to their son were an added attraction. Slides of Gomera (Canary Islands), Andalucia (Spain), Italy and Pembrokeshire, presented by Graham Ackers, Pat Acock and Howard, drew the day to a fitting close. Many thanks to Howard for a very well organised, interesting and enjoyable day.

Alison Paul

EAST ANGLIA

Margaret Nimmo-Smith

Chalkney Wood, near Earls Colne, Essex – 12 August. Ten of us met at the car park (52/871280) to explore this mixed Forestry Commission wood. We found *Dryopteris filix-mas* and *D. dilatata* almost immediately in a large area that had been coppiced. One plant of *D. affinis* subsp. *borreri* was found. We walked down to a path on the eastern edge and discovered a very wet hillside with many plants of *D. dilatata* growing on tree-stumps and drier decaying branches on the ground. Here also we found several plants of *D. carthusiana.* Returning to the path we passed a patch of *Equisetum arvense* and a large stand of *Pteridium aquilinum.* A picnic lunch was consumed before retiring to the local pub.

In the afternoon we reassembled at Honeysuckle Cottage, Halstead Road, Aldham, where Vivien Green and her sister served us tea while we enjoyed the many ferns packed into this small garden. Despite the dry summer, the ferns were looking superb and there were many fine specimens of *Polystichum setiferum* varieties: in particular good divisilobums, perserratums and congestums. She also has a range of other ferns including scollie cultivars, *Dryopteris* varieties and foreign hardy ferns.

Our thanks go to Tim Pyner for leading the morning visit and to Vivien Green and her sister for their hospitality.

Ickworth House and Higham Grove, near Bury St Edmunds, Suffolk – 1 October. Five of us gathered in the car park of Ickworth House (52/816615) which is a National Trust property. It is surrounded by extensive parkland with woodland, but we were to explore the formal garden, termed the Italian Garden, at the rear of the house. *En route* we passed a planting of native ferns moved from the parkland woods: large plants of *Dryopteris filix-mas* and *D. affinis* subsp. *borreri.* Crossing into the Italian Garden we saw part of a substantial sculpture exhibition by Elizabeth Frink and also two unusual fountains. Our destination was the Stumpery bounded by substantial box hedges: a development of a Wilderness garden with arrangements of tree-stumps planted with ferns, ivies and evergreen shrubs, particularly box, as the garden holds the National Collection of *Buxus.* Most of the ivies and other plants were labelled but not the ferns, so I was bidden to label them. They were mostly the commoner cultivars of British ferns but included one or two plants probably from other National Trust properties such as an unidentified *Pellaea* which was obviously hardy. Altogether this garden is worth visiting as apart from the ferns and the box collection, it contains one of the best collections of hardy evergreen shrubs that I have seen.

Lunch was eaten in the car park where we were joined by the Craddocks. We then drove to Higham Grove (52/751647) between Barrow and the A14. We were met by the owner who conducted us around the wood, mainly oak with *Thuja* as a maiden crop planted just post-war, on what had been an ancient woodland site. We found many plants of *Dryopteris filix-mas* and *D. dilatata,* and after some searching found a few plants of *D. affinis* subsp. *borreri.* Just before completing our tour, we found one large plant of *Athyrium filix-femina* although it had obviously suffered considerably in the summer drought.

We then visited Marie and Geoff Winder's garden in Barrow (52/772639), which proved to have some good established ferns, particularly polypodies and polystichums. We all examined the pots of sporelings coming on, some from the Spore Exchange, and the many pots of *Cyclamen*, another of Geoff's interests. We were then given a substantial tea and shown a video of *Idropterus nephrolepis*, an aphid which is found on the Boston fern, *Nephrolepis exaltata*. Many thanks indeed to Geoff and Marie for organising an interesting meeting and providing such excellent hospitality.

Cambridge Social – 12 November. At our annual social meeting at Margaret Nimmo-Smith's house members were able to explore the garden, do a fern quiz compiled by Margaret, see slides, swap ferns and consume tea.

NORTH-WEST

Holker Hall Show – Taking our Lake District ferns to the public – 2-4 June. The North-West Group was asked to contribute a display to the 1995 Great Garden and Countryside Festival held annually at Holker Hall in the southern Lake District during the first week in June. Set in its beautiful parkland surroundings, this increasingly popular three-day show attracts exhibitors and visitors from throughout the country. We were both honoured and slightly overawed to be asked to participate in such an event. However, with the gauntlet at our feet the challenge was boldly accepted and members gathered for a pre-show 'think tank' (and an excellent tea, for which this Group is fast gaining a reputation!). From this meeting we decided firstly to promote our local Lake District fern species and secondly, to enable visitors to participate within the display.

Entitled 'Our Lake District Ferns – how to know them and grow them', we adopted a simple 5m bench stand, with a central plinth and a black/white theme, in order to display our ferns to their best advantage. The plinth, draped in an ancient, moss-green chenille curtain, provided information on the place of the fern in history and pre-history, including mention of the venerability of ferns and the Victorian fern passion. This part of the display was fronted by a graphic and living example of the various stages of a fern's life-cycle and was crowned by a superb specimen of *Osmunda regalis*, representing a fern form of 280 million years ago. Flanking this 'ancient' plant were, I should imagine, two of the largest and finest *Asplenium marinum* in cultivation. On one side of the plinth examples of most of the fern species indigenous to the Lake District were displayed in terracotta pots. On the other side were displayed fine specimens of typical local fern forms for people to identify in a 'Cryptic Fern Competition', along with information about the BPS and other fern matters. All the plants, pots and labels were provided by Group members and were of real 'show' quality, despite the earliness of the fern season. Several of the plants so generously loaned were permitted to go to new homes after the show, providing some delighted members with much coveted new fern species. Titles and graphics, because of the educational nature of the exhibit, were kindly funded by the Percy Greenfield Fund of the BPS. This was an invaluable contribution, permitting a professional looking finish to our stand.

Proof of the success of our exhibit came not only in the form of a Silver-Gilt Award to the North-West Group (and the lingering attention of the judges), but also in the almost instantaneous interest of fellow exhibitors as we were putting the finishing touches to the display. The overwhelming interest in our stand from show visitors was surely an intimation of the increasing interest in ferns that has been rekindled nationally and Group members manning the display were kept busy with questions and stimulating discussions on local ferns, garden ferns, fern conservation and the role of the BPS.

The greatest moment of the Show for me was hearing of a piece of a hundred year old planting of *Osmunda regalis* that a show visitor had thrown out of their garden! As a result, a trip to the other side of the Cumbrian Mountains produced a rootstock of about 0.75m tall that could only be lifted with difficulty. Fortunately the Land-rover was able to carry this 'monster' fern, and several of its 'pups' straight to its planting site beside the newly restored pond in the steep woodland garden behind Brantwood House. I am looking forward with anticipation to the full potential of this wonderful plant being realised and in the meantime, the North-West Group are planning already for Holker '96.

Sally Beamish

Brantwood, Coniston, Cumbria – 17 June. One of the national field meetings during the Society's Centenary year included a visit to Brantwood, best known as John Ruskin's home beside Coniston Water and less well known as the earlier home of W.J. Linton, author of *The Ferns of the English Lake Country* (1875). Sally Beamish, the Head Gardener, had outlined plans to develop a garden of native fern species, forms and cultivars and had sought members' assistance in finding the ferns for its planting (*Bulletin* 4(2): 74). The following year, writing in the *Pteridologist* (2(3): 137-138), Sally explained the history and detailed plans for developing what was to be called 'The Linton Fern Garden'.

Against that background, the North-West Group were delighted to be invited to Brantwood this year. Twenty members found that the very small Brantwood garden staff, ably assisted by a team of volunteers, had made great progress, firstly, by clearing considerable areas of the *Rhododendron ponticum* scrub on the steep west-facing slope behind Brantwood House; secondly, by planting many ferns; and thirdly, by starting new coppice planting to provide shelter and enclosure for the ferns. This latter work will restore 'Brantwood Coppice', the original title for this part of the garden.

The list of different ferns now growing at Brantwood totals over 160 and includes 21 *Asplenium,* 25 *Athyrium filix-femina,* 40 *Dryopteris,* 28 *Polypodium* and 32 *Polystichum.* A very high percentage of these are cultivars, for example, of ten *Dryopteris affinis* none are identified as morphotypes and nine are cultivars. Here is a wonderful opportunity for one of the Society's *D. affinis* specialists to provide Brantwood with specimens of the morphotypes. Little doubt that Sally would welcome such additions to the collection which is primarily designed to educate visitors. In fact such an assembly would help many of the less-informed BPS members (and there are many of us who fall into that category). Correct labelling and identification is important in this collection and is of constant concern to the Brantwood staff who openly welcome advice. Unfortunately, as shown during the NW Group's visit, opinions as to the correct names of cultivars in particular often vary even between the most knowledgeable.

The development of the fern garden has not been easy. Many of the ferns are comparatively young plants and will take time to establish themselves. Meanwhile, being in an open natural environment, there is a wild life to endure. Even the occasional visit by deer can create havoc. Strangely, they seem to take great delight in uprooting *Polypodium* – it is fortunate that these are tough enough to recover when replanted. Despite all difficulties, Brantwood is assembling a superb collection and it was a joy to be able to examine leisurely so many ferns in one place. Not every listed item is yet in the Linton Fern Garden, some are being tended in a nursery area. These will further enhance the fern beds at a later date. It is particularly noteworthy that the majority of specimens have either come from leading fern nurseries whose owners are BPS members or from other members of the Society. As the plants mature it will surely become a magnificent garden.

The group then visited the nursery and later walked the shore of Coniston Water before turning across the shore road into the fields leading to Beck Level Gorge. Progress up the gorge was difficult and as a result the party split – the brave progressing up the watercourse and the less brave along the higher bank. The gorge revealed *Polystichum setiferum, Gymnocarpium dryopteris, Phegopteris connectilis,* and to the most adventurous who dared to venture to the head of the gorge, *Hymenophyllum wilsonii.*

From the gorge, the return journey was again across fields into woodland. There were large drifts of ferns including *Athyrium filix-femina, Dryopteris affinis, D. filix-mas, D. dilatata* and *Oreopteris limbosperma*. Unfortunately there was only time for a very cursory examination of this fern assembly. However, one particularly large plant, obviously a hybrid, stood out. It was assumed that this was the *Dryopteris* x *complexa* found during the 1991 Centenary visit and nobody now dared question the identification given by that august gathering!

The final treat was the large pond that had been reconstructed and relined with a clay bottom, which was home to thousands of tadpoles whose presence blackened the water. It was all guarded by a splendid *Osmunda regalis.*

The visit to Brantwood had been most informative and very enjoyable. Our special thanks go to Sally for hosting us for the day. We have great admiration for the work she is doing at Brantwood and recommend other members support the Linton Fern Garden project whenever possible.

Eric Baker

St Bees Head, Whitehaven, Cumbria – 1 July. St Bees Head, whose red sandstone cliffs rise to a height of nearly 100m, lies four miles south-west of Whitehaven and about twelve miles north-west of the nuclear installations of Sellafield. It is, nevertheless, a most attractive site, rich in wild flowers, home to numerous cliff-nesting seabirds and with magnificent views.

Fourteen members gathered in Sandwith village on a quiet, grey morning before driving up the narrow private road to Tarnflat Hall (25/948146) where cars were parked. From here the route followed lanes and tracks over the top of the headland where large numbers of common ferns were seen, including *Dryopteris filix-mas, D. affinis, D. dilatata* and *Athyrium filix-femina.* Even at this stage of the summer some ferns appeared to be suffering from lack of moisture. The route now descended steeply to the rocky shore of Fleswick Bay where there are many plants of *Asplenium marinum,* most of them growing under overhangs, some of them deep in the gloomy recesses of a cave. Having explored the shore we climbed the cliff path north of the bay, passing colourful displays of dyer's greenweed (*Genista tinctoria*) and bloody cranesbill (*Geranium sanguineum*) before stopping for lunch.

The sun was out and the afternoon warm as we continued along the cliff tops enjoying fine views of fulmars, guillemots, razorbills, kittiwakes and other seabirds. Just north of the lighthouse the sheer cliffs are replaced by very steep grassy slopes descending to the sea and here a small colony of *Dryopteris aemula* was found and admired. This fern is extremely rare in Cumbria, having been seen recently at only two other sites in the county.

After a further break for refreshment and debate we turned inland and back to the farm, finding a nice collection of *Asplenium* ferns on the walls and farm buildings (*A. trichomanes, A. ruta-muraria, A. adiantum-nigrum* and *A. scolopendrium*). This brought our total count of fern species up to 14.

Mike Porter

Reginald Kaye Ltd, Waithman Nurseries, Silverdale, Lancs. – 22 July. A party of about forty was welcomed to the Nursery by Dominic Kaye who explained that he intended to devote the morning to a series of three demonstrations on the propagation of ferns, to be followed in the afternoon by a tour of the gardens and nursery facilities.

Propagation from spores. Members were given a full demonstration of the sequence starting with compost sterilisation and sowing the spores, followed by a detailed account of the aftercare needed to produce established plants. There was some discussion of the long-term viability of spores and it was agreed that some species do show extremely long viability, though others, such as *Osmunda* have green spores which need to be sown fresh for success. In general, storage in a cold, dry environment was suggested. Individuals were then given the opportunity to sow some spores for themselves, Dominic having thoughtfully organised a considerable array of the necessary facilities.

Propagation from leaf bases. This method was illustrated using a mature specimen of *Asplenium scolopendrium* 'Crispum'. It was made clear that this technique is particularly applicable for ferns which do not come true from spores, as it ensures the production of plants genetically identical to the parent. It is a much more productive method of propagation than division. It was pointed out that the parent fern used for the demonstration could be replanted with little or no loss of size or vigour. Members were again given an opportunity to test their own skill with a stock of leaf bases from the same fern.

Propagation from bulbils. The fern selected for this method was a *Polystichum plumosum* 'Divisilobum' on which the bulbils were not fully developed. It was pointed out that such an operation would be better carried out in October when the bulbils would be more prominent and offer more chance of success.

Garden tour. After lunch members were conducted round the propagation and growing tunnels by Dominic, who provided an instructive commentary giving an insight into the production of ferns and other plants in a specialist nursery. The new resources designed and erected by the nursery staff should give great scope for expansion and improvement. The party were then led on a comprehensive tour of the old gardens which are packed with a fascinating variety of hardy ferns consisting largely, of course, of Reginald Kaye's collection but with some interesting new additions.

The visit concluded with a well-deserved vote of thanks to the Kayes for their remarkable hospitality to the NW Group.

Melville Thomson

Basic Fern Identification Day, Crosthwaite, Kendal, Cumbria – 6 August. Robert Sykes organised this joint meeting with members of the Cumbria Wildlife Trust. Eight of the CWT and 22 members of the BPS North-West Group met at his Crosthwaite home in time for coffee. Robert then explained the details of the typical fern life-cycle and how to identify the genera and species we might hope to find in Cumbria. He had an impressive array of fronds of all the major taxa which were handed round for close examination. Refreshed by cold drinks and biscuits and armed with our newly aquired expertise we set off for Whitbarrow Scar.

We approached the CWT Hervey Reserve from The Howe; this easier gradient thankfully expended less energy on this exceptionally hot day. During our walk through woodland we found *Athyrium filix-femina, Dryopteris filix-mas* and *Pteridium aquilinum* alongside the path and a fine *Polystichum aculeatum* on a damp rock-face. Once on the Reserve we crossed grassland towards the summit at the Lords Seat (34/440870) where we ate our lunch admiring the extensive views. This was in complete contrast to our Centenary visit when in walking just a few paces we lost our neighbours in the mist.

We then had a happy and rewarding time searching the face of the limestone pavement where ferns grew in profusion. Within the grykes *Asplenium trichomanes* subsp. *quadrivalens, A. ruta-muraria, A. scolopendrium, Cystopteris fragilis, Dryopteris submontana, Gymnocarpium robertianum* and *Polypodium interjectum* were common. We looked for *Asplenium trichomanes-ramosum* but only Robert was successful and the plant had just a single frond. I believe *A. ceterach* was also found.

Arriving back at Crosthwaite well contented with the day, some reluctantly departed while the rest enjoyed a delicious home-made tea and a tour of Robert's ferns. We all thank Sue and Robert for their hospitality.

Cynthia Kelsall

Hutton Roof Crags, Lancs. – 16 September. This limestone area is just as deeply eroded as Great Asby Scar which we visited last year, but lower in height (max. 274m) and with much more vegetation cover. Nineteen members assembled at 34/552788. This is a spot height of 192m so the climb to the summit was not very long or steep though the going underfoot was tricky in places.

Our path led us through a profusion of *Pteridium aquilinum* but we soon began to see 'real' ferns. *Dryopteris submontana* grew well in the open and every boulder had its community of *Asplenium scolopendrium, A. trichomanes* and *A. ruta-muraria.* A little higher up *Cystopteris fragilis* began to appear and several clumps of *Dryopteris filix-mas* were also noted, though none of the latter had reached any great size. In this part of England we usually expect to see *Gymnocarpium robertianum* in sheltered grykes but here it was found flourishing in several quite open locations on a north-facing slope. Higher up we saw it in its more usual places. Also here, and in other more open spots, we recorded *Dryopteris affinis* subsp. *affinis.*

As we ascended a little we entered an area of patchy, low growing ash, rowan and other trees, with juniper bushes in some numbers. It was in this more sheltered environment that we began to find quantities of *Polypodium interjectum* which is commoner locally than *P. vulgare,* some isolated examples of *Asplenium trichomanes-ramosum* and fine specimens of *Polystichum aculeatum.* We did not expect to find *Blechnum spicant,* a marked calcifuge, but several specimens were found in dips where leaf-mould had accumulated and an acid 'mini-environment' had presumably formed.

photo: M. Garstang

Phillip Edwards, Nan Hicks, Bernice Owen, Eileen & Jim Adams, George Huse, Dennis & Margaret Weir, Jack Garstang and Robert Crawford at Hutton Roof Crags limestone pavement.

No field trip is without its problems of identification and we had two. First, had we found *Polypodium cambricum?* A frond was taken for examination and the microscope revealed that we had. This was a good find but not a new species for the tetrad. Our second puzzle concerned what looked like a tiny *Asplenium scolopendrium,* two clumps of which were found within a few metres of each other, in each case in association with normal *A. scolopendrium.* No-one could name it for certain so a frond was sent to Jack Bouckley. I quote his reply, "for recording purposes it should be listed as *A. scolopendrium* 'Muricato-marginatum' (minute form)". We think this is a first for the area.

This was a very interesting and rewarding outing and we thank Mike Porter for arranging and leading it.

Peter Hindle

AGM, Holehird, Windermere, Cumbria – 14 October. Thirty-four members assembled for our second AGM. The meetings reports showed another good year and our thanks are due to the leaders. Formal business was dealt with swiftly and efficiently and was followed by a discussion on ideas for the 1996 programme.

Dr Trevor Piearce then gave a fascinating talk, accompanied with slides, on 'The Victorian Fern Craze', this being augmented with a display of Victorian fern books and *objets d'art.*

Winners of the competition held were: (a) Potted Fern – Nan Hicks, (b) Fern Crossword – Peter Hindle. After an enjoyable tea provided by members, the meeting closed at 4.30 p.m.

Peter Hindle

SPECIAL INTEREST GROUPS

FOREIGN HARDY FERN GROUP

A.R. Busby

I am pleased to report that this new Group has attracted sixteen members subscribing £2 per year. I have managed to circulate one newsletter which featured an illustration of an incised form of *Polystichum munitum* and several short articles by members on their experiences with growing foreign hardy ferns. Another newsletter is planned for the end of the year. Anyone wishing to join this specialist group should write to the General Secretary.

AQUATIC PTERIDOPYHTE GROUP

J.M. Ide

Seventeen members from 11 countries have expressed an interest in joining this group. It is hoped that the first newsletter will be published by the end of 1995. Anyone else interested in joining the group should contact Jennifer Ide, 42 Crown Woods Way, Eltham, London SE9 2NN.

TREE-FERN GROUP

M.H. Rickard

For various reasons this group has been slow to get off the ground but I hope that by the time you read this note a first newsletter will have been circulated. If you are interested in joining the group please let me know – Martin Rickard, Kyre Park, Kyre, Tenbury Wells, Worcs. WR15 8RP, tel. 01885-410282, fax 01885-410398.

FILMY FERN GROUP

S.J. Munyard

It is proposed to set up a group for those with a special interest in filmy ferns. The likely aims of the group will be (a) to exchange ideas and experiences relating to the cultivation and propagation of these species, (b) to compile a database of interested members and also the species in cultivation, (c) in time, to exchange these plants which require such specialised conditions for growth. Will any members wishing to receive further details please contact Steve Munyard at 234 Harold Road, Hastings, East Sussex TN35 5NG.

THE AMERICAN FERN SOCIETY INC.

The AFS wishes to extend an invitation to readers of this *Bulletin* to join the American Fern Society. Regular members receive the *Fiddlehead Forum* six times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their knowledge of ferns. Journal members receive, in addition to *Fiddlehead Forum*, the scientific quarterly *American Fern Journal.* Membership costs $11 and $20 per annum repectively, including overseas postage ($14 and $31 if airmail postage required). For particulars please write to Dr Richard L. Hauke, 456 McGill Place, Atlanta, Georgia 30312 USA. Prospective members residing in Great Britain should write to Miss A.M. Paul, Dept. of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD.

MALVERN SPRING SHOW – 5-7 May

A.R. Busby

Due to personal circumstances I was unable to lend my full weight to the preparation and manning of the Society's stand at Malvern this year. Thankfully, once again, Ray and Brenda Smith, and John and Margaret Collins stepped into the breach and ensured that the stand was suitably furnished to give an excellent impression of the Society's interests and activities to the gardening public.

Due to the early date of this show it is difficult to provide many hardy ferns for the stand so about 70% of the ferns used are indoor, with the remaining 30% represented by some British and foreign hardy ferns. However, as always our 'jewel in the crown' was a superb display of *Cheilanthes* kindly supplied by Clive Brotherton.

The stand generated much interest and we enrolled one member at the stand and one or two more shortly afterwards. Considering the present interest in the cultivation of ferns it is surprising that we do not enrol more people. One would think that the RHS shows would be very fertile ground for obtaining new members. It seems that folk are keen to include some ferns in their gardens but are not sufficiently interested to join us and learn more about these fascinating plants.

My thanks to all the members who called to say hello but especially to Ray and Brenda Smith, John and Margaret Collins, Alan Ogden and Clive and Doreen Brotherton for setting up and manning the stand and generally carrying the burden. More help is always required and members interested in assisting us with next year's stand should contact the Secretary immediately.

SOUTHPORT FLOWER SHOW – 17-19 August

A.R. Busby

It was a very different Victoria Park that awaited exhibitors and visitors to this year's Southport Flower Show. Since last year's show, lots of money has been spent on new roads, improved entrances and more importantly, a proper drainage system. The latter by far the most welcome improvement.

Considering the intensely hot summer both before and during the show, the quality of the fern exhibits was quite good, with only minor damage evident on some exhibits. News of Brian Russ's hospitalisation due to a heart attack cast a shadow over the fern fraternity but Brian had insisted that his ferns should be exhibited anyway and so they were, thanks to Dave Kershaw. The quality of presentation continues to improve and it is gratifying to see well grown plants presented well.

This year's judge was A.R. Busby. The prize winners are listed below.

Class 6	Individual Championship: Four hardy, two greenhouse, two foreign hardy ferns: 1st Mrs A.G. Beenham, 2nd Mrs E.A. Gibbs, 3rd R.J. Smith (4 entries)
Class 7	Three Hardy British Ferns (dissimilar): 1st R.J. Smith, 2nd Mrs E.A. Gibbs (3 entries)
Class 8	Three Foreign Hardy Ferns: 1st H. Shepherd (2 entries, 1 disqualified)
Class 9	Three *Polypodium* (distinct varieties): 1st R.J. Smith, 2nd Mrs E.A. Gibbs (2 entries)
Class 10	Three *Polystichum* (distinct varieties): 1st Mrs E.A. Gibbs, 2nd R.J. Smith (3 entries, 1 disqualified)

Class 11	Three *Athyrium*: 1st Mrs E.A. Gibbs (1 entry)
Class 12	Three *Asplenium* (excluding *A. scolopendrium*): 1st H. Shepherd, 2nd Mr & Mrs B. Russ, 3rd Mrs E.A. Gibbs (4 entries)
Class 13	One British Fern (any kind or variety): 1st H. Shepherd, 2nd Mrs E.A. Gibbs, 3rd S.J. Houghton (3 entries)
Class 14	One Greenhouse Fern: 1st Mrs E.A. Gibbs, 2nd S.J. Houghton, 3rd Mr & Mrs T. Melling (5 entries)
Class 15	Three *Asplenium scolopendrium* (3 distinct varieties): 1st H. Shepherd, 2nd R.J. Smith, 3rd Mrs E.A. Gibbs (3 entries)

My thanks to Graham Gentry, Ray and Brenda Smith, Peter and Joan Hindle, Dave Kershaw and Libby Gibbs for assisting on the Society's stand.

OBITUARY

ROBERT M. LLOYD 1938 - 1994

Bob Lloyd joined the BPS in 1959 and was a member for almost 30 years.

I first met Bob on 26 April 1970 on my return from a trip to New Guinea. I remember the date well as it lasted 48 hours: after 12 hours of fern hunting in the Philippines with Michael Price, I arrived in Honolulu at 07.30 the same day! Bob had arranged for me to give a seminar at Hawaii University, where he was a lecturer in Botany. We then visited the Bernice P. Bishop Museum and met his student, Earl Bishop, who was studying *Adenophorus*. We later went to Maui, the wettest place on earth and a site for *Selaginella deflexa,* a Hawaiian endemic and close relative of our boreal *S. selaginoides,* which I found thanks to Earl's excellent guidance. Bob began his career in California and lost no time in involving me in challenging discussions about fundamentals of fern ecology in temperate and tropical environments. That evening over a delicious meal in Hawaiian style on the beach we discussed that favourite topic of Bob – breeding strategies in plants, especially *Sadleria*.

About a year after this meeting Bob moved to Ohio University where he continued his pioneering work on fern reproductive and population biology. He was dedicated to teaching and will be fondly remembered by the many students he encouraged.

We had established a firm friendship and next met in the UK when Bob visited for a week, and we planned a long sabbatical for Bob in the UK. However, he soon developed kidney problems and it never came to fruition. We exchanged letters from time to time, always full of stimulating developments – his own and his wife Lee's research and family news. Lee continues with her research on gametophytes. Our condolences go to Lee and the boys.

Clive Jermy

GROW GREAT FERNS: Los Angeles International Fern Society (LAIFS)

Fern journal bimonthly, includes fern lesson. Educational meetings, materials, spore store and books. Annual dues: $20 domestic, $24 USA first class, Canada & Mexico, $26 overseas surface, $28.50 overseas airmail. Apply to: Dave Fay, P.O. Box 90943, Pasadena, California 91109-0943 USA.

HOLTTUM MEMORIAL PTERIDOPHYTE SYMPOSIUM

'Pteridology in Perspective' – 17-21 July

Alison Paul

Professor Eric Holttum was pre-eminent among 20th century pteridologists. This meeting was held to celebrate his outstanding contribution to the study of ferns and fern allies. The symposium was organised by staff and Friends of the RBG Kew and the Botany Department of The Natural History Museum, London. It was supported by seven organisations including the BPS which sponsored two of its overseas members to attend. Holttum joined the BPS in 1950, was President from 1960-63 and a Vice-President thereafter; he was an enthusiastic host to many BPS meetings at Kew.

During the week 163 delegates from 41 different countries were present, providing an unsurpassed opportunity to talk ferns at every level. On the Sunday evening we were welcomed to Kew on behalf of the Director by Dr Gren Lucas, Keeper of the Herbarium, during the inaugural reception in the Cambridge Cottage Gallery. The Gallery contained an excellent exhibition of paintings of Malesian plants, including ferns, as well as a wonderful display of living plants of ant-ferns (*Lecanopteris*). An exhibition of various aspects of the life and work of Holttum could be seen in the Cambridge Cottage Lounge, many of the items contributed by his daughter, Deborah Holttum, who attended the symposium. A further talking point was the display in the symposium reception area of paintings and drawings of pteridophytes loaned by a number of botanical artists.

The papers and posters presented during the week addressed almost all aspects of pteridology in relation to both extant and fossil pteridophytes worldwide, reflecting Holttum's broad interest in pteridology. Each session covered a broad theme introduced by a keynote speaker.

On Monday morning, following Prof. Sir Ghillean Prance's welcoming remarks as Director of RBG Kew, Prof. William Stearn summarised Holttum's life. He pointed out that in addition to Holttum's major role in pteridology he was the founder of the orchid industry in Malaya. Mike Price first met Holttum in 1969 in the Philippines; he illustrated his talk on Holttum with a fascinating account of their correspondence – over 400 letters were sent each way. The letters revealed Holttum's views on many groups of ferns as well as details of his work on orchids, bamboos, gingers and horticulture. They showed both the breadth and depth of Holttum's work and the importance he attached to a combination of field and herbarium studies.

The keynote speaker for the first session – Floras and Biodiversity, and Conservation – was Marco Roos who indicated the need to describe and inventory biodiversity and to disseminate that knowledge. He suggested that *c.*70-94% of ferns are known and that of those, 80% are from tropical areas which cover only 15% of the land surface. Fern floras are completed for *c.*50% of the world which is much greater than for any other group.

The session comprised a further 13 talks which continued on Tuesday morning. There then followed one of several sessions set aside during the week to view the posters and for workshops on sectioning techniques, pteridophyte curation, DNA techniques, computer-aided analyses, nomenclature of cultivated ferns, and cytology. The fifty or so posters were very well presented and covered such diverse subjects as 'Pteridophytes in the mangrove swamp and freshwater swamp of Thailand', 'Uses of ferns in Sarawak', 'Trichomes in the Hymenophyllaceae', 'Ferns in Renaissance paintings', 'The genus *Dennstaedtia* in Ecuador' and 'Allozyme evidence for the relationships between some members of *Asplenium sarelii* complex'.

Prof. Bert Hennipman's keynote address began the session on Generic and Family Concepts. It was interesting to see a comparison of the numbers of families and genera recognised in works by Christensen, Copeland, Ching, Pichi Sermolli and Kramer. He put forward the controversial proposal that a Scientific Consensus Classification for pteridophytes be produced, acknowledging that updates would be necessary as new knowledge becomes available. Such a classification should be based on in-depth monographic research in association with analysis of both known and new characters. Six further talks on different approaches to classification followed.

Wednesday's theme, Pattern and Process, began with Margaret Collinson addressing the question 'What use are fossil ferns?'. She gave examples of the range of fossil evidence for pteridophyte families and indicated changes in morphology, growth habit and ecological tolerance through time. She suggested it was inadequate to base phylogenies solely on living representatives. This set the scene for eight talks on pteridophyte phylogeny and anatomy from palaeobotanical and current viewpoints.

In the evening we had the opportunity to see the superb range of ferns in the Princess of Wales Conservatory, refreshed with cheese and wine.

Liz Sheffield introduced Thursday's theme: Interaction with the environment and other organisms. She indicated how little is known of the environmental factors influencing spore production and dispersal, and the production of gametangia and formation of young sporophytes. Field observations and laboratory experiments are, however, revealing information on the ecological significance of soil spore banks and the viability of spores. Twelve further presentations covered many other aspects of this fascinating theme.

In the evening the temperature was tropical as we celebrated the 100th anniversary of Holttum's birth at the symposium dinner at Syon Park. In her after dinner speech, Barbara Parris spoke of her memories of Holttum.

Species concepts and speciation was the subject of the final day. Chris Haufler opened this session by defining various different species concepts – taxonomic, biological, evolutionary and phylogenetic. He went on to describe three means of speciation – primary divergence by geographic or ecological separation, secondary speciation through hybridisation and tertiary speciation as a result of gene silencing in polyploids. The next five lectures further illustrated some of these points.

Trevor Walker, BPS President, succinctly summed up some of the main issues which had arisen during the week, leading into a period of general discussion. John Woodham's tape of Prof. Holttum speaking about the history of the living fern collections at Kew was a moving finale to the symposium.

A week-long post-symposium excursion to Devon and Cornwall was organised by Chris Page. The 19 participants enjoyed visits to many interesting gardens and field sites.

Many thanks to the organising committee and their teams of helpers for an exceedingly well planned, successful and enjoyable programme. The Symposium Proceedings should be published in 1996 by RBG Kew, and will provide an excellent overview of the current state of pteridological knowledge.

MEETINGS PROGRAMME 1996

Meetings Secretary: A.C. Pigott, 43 Molewood Road, Hertford, Herts. SG14 3AQ
Meetings Sub-Committee: P.J. Acock, N.J. Hards, A.M. Leonard, A.C. Pigott, P.H. Ripley

Sat 2 March – **Spring Indoor Meeting – London**
Location: Botany Dept., Natural History Museum, Cromwell Road, London SW7
Leader: J.C. Vogel Time: 11.00

Fri 10 - Sun 12 May – **Malvern Spring Show: BPS Stand**
Location: The Three Counties Showground, Malvern
Further Info: Matt Busby

Sat 18 May – **Day Indoor Meeting – Kew**
Location: Royal Botanic Gardens, Kew, Surrey
Leader: Peter Edwards Time: 11.00

Sat 22 - Sun 23 June – **Weekend Field Meeting – Yorkshire**
Leader: Jack Bouckley Times: 09.30 each morning

Sun 7 July – **Day Indoor Meeting – Oxford**
Location: Oxford Botanic Garden & University Arboretum, Nuneham Courtenay
Leader: Doreen Holly Time: 11.00

Sat 27 July – **Day Indoor Meeting & Fern Show – Coventry**
Location: Warwick University, Dept. of Science Education, Canley, Coventry
Leader: Matt Busby Time: 11.00

August – **Week Field Meeting – Argyll, Scotland**
Leader: Hugh Corley Times: 09.30 each morning

Thurs 22 - Sat 24 August – **Southport Flower Show: BPS Stand**
Further Info: Matt Busby

Sat 12 October – **Autumn Indoor Meeting & Annual General Meeting – York**
Location: University of York
Leader: James Merryweather Time: 11.00

For full details of these and other meetings of interest to members, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

REGIONAL MEETINGS

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Wessex	J.E. Jarvis, Vermont, Jubilee Road, Nailsworth, Stroud, Glouc s. GL6 0NG
Midlands	A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD
Leeds & District	J.H. Bouckley, 209 Woodfield Road, Harrogate, Yorks. HG1 4JE
South-East England	P.H. Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia	Mrs M.E. Nimmo-Smith, 201 Chesterton Road, Cambridge CB4 1AH
North-West England	Mrs M. Garstang, Overbeck, Pennybridge, Ulverston, Cumbria LA12 7RQ

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The Flower Show Secretary
44 Hoghton Street, Southport, Merseyside PR9 0PQ

The British Pteridological Society
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